



SERVICE MANUAL

DUAL BAND FM TRANSCEIVER

IC-2350H

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INTRODUCTION

This service manual describes the latest information for the IC-2350H at the time of publication.

| MODEL | VERSION NO. | VERSION | SYMBOL |
|----------|-------------|-----------|--------|
| IC-2350H | #02 | Europe | EUR |
| | #03 | Italy | ITA |
| | #05 | U.S.A. | USA |
| | #06 | Korea | KOR |
| | #07 | Australia | AUS |
| | #08 | Asia | SEA |

DANGER

NEVER connect the transceiver to an AC outlet or to a DC power supply that uses more than 16 V. Such a connection could cause a fire hazard and/or electric shock.

DO NOT expose the transceiver to rain, snow or any liquids.

DO NOT reverse the polarities of the power supply when connecting the transceiver.

DO NOT apply an RF signal of more than 20 dBm (100 mW) to the antenna connector. This could damage the transceiver's front end.



ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<SAMPLE ORDER>

1110002750 S.I.C TA75S01F IC-2350H MAIN UNIT 1 piece
8810004430 Screw PH M3 x 6 ZK IC-2350H Bottom cover 6 pieces

Addresses are provided on the inside back cover for your convenience.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the transceiver.
2. **DO NOT** open the transceiver until the transceiver is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the transceiver is defective.
6. **DO NOT** transmit power into a signal generator or a sweep generator.
7. **ALWAYS** connect a 40 dB to 50 dB attenuator between the transceiver and a deviation meter or spectrum analyzer when using such test equipment.
8. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

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SECTION 1 SPECIFICATIONS

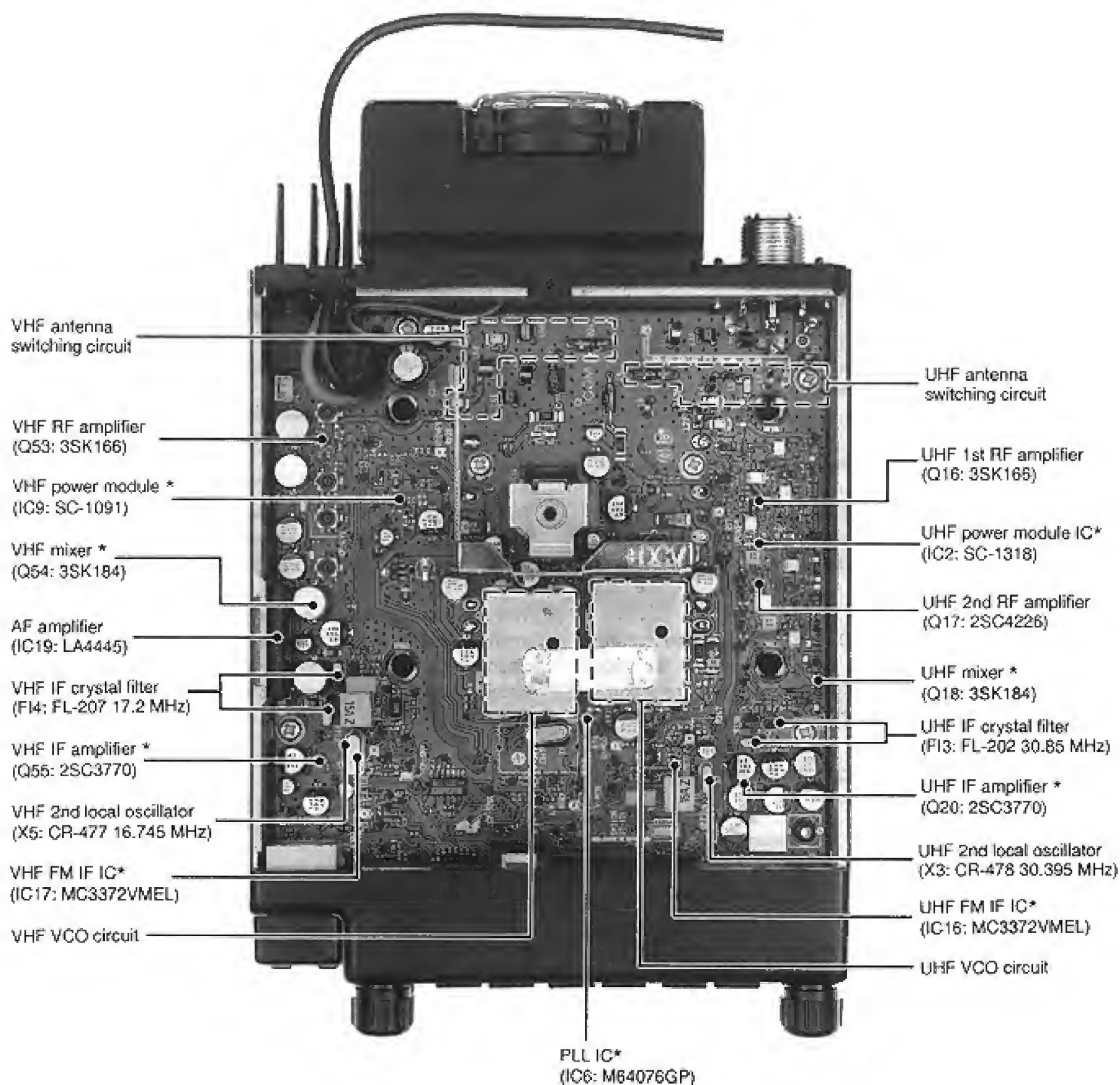
| | | | 144 MHz | 430 (440) MHz | |
|--------------------------|--|---|--|--|------------------|
| GENERAL | Frequency coverage (MHz) | U.S.A. | Tx:144.0–148.0 MHz Rx:118.0–174.0 MHz* ¹ | 440.0–450.0 MHz | |
| | | Europe | 144.0–146.0 MHz | 430.0–440.0 MHz | |
| | | Asia | Tx:144.0–148.0 MHz Rx:136.0–174.0 MHz* ¹ | 430.0–440.0 MHz | |
| | | Italy | Tx:144.0–148.0 MHz Rx:136.0–174.0 MHz* ¹ | Tx:430.0–440.0 MHz Rx:400.0–479.0 MHz* ² | |
| | | Australia | 144.0–148.0 MHz | 430.0–440.0 MHz | |
| | | Guaranteed frequency range: * ¹ 144.0–148.0 MHz * ² 430.0–440.0 MHz | | | |
| | Mode | | FM (F3E) | | |
| | Frequency stability (–10 °C to +60 °C, +14 °F to +140 °F) | | ±10 ppm | | |
| | Tuning steps | | 5, 10, 12.5, 15, 20, 25, 30 or 50 kHz | | |
| | Antenna impedance | | 50 Ω (nominal) | | |
| | External DC power | | 13.8 V DC ± 15 % (negative ground) | | |
| | Current drain (at 13.5 V, typical) | Tx | High | 11.5 A (at 50 W) | 11.0 A (at 35 W) |
| | | | Low 2 | 6.0 A (at 10 W) | |
| | | | Low 1 | 4.5 A (at 5 W) | |
| | | Rx | Rated audio | 1.8 A | |
| | | | Squelch ON | 1.2 A | |
| Usable temperature range | | –10 °C to +60 °C (+14 °F to +140 °F) | | | |
| Dimensions | | 140 (W) x 40 (H) x 204.5 (D) mm; 5 1/2 (W) x 1 9/16 (H) x 8 1/16 (D) in | | | |
| Weight | | 1.2 kg; 2 lb 10 oz | | | |
| TRANSMITTER | Output power | | 50 W(HIGH), 10 W(LOW2), 5 W(LOW1) | 35 W(HIGH), 10 W(LOW2), 5 W(LOW1) | |
| | Modulation system | | Variable reactance frequency modulation | | |
| | Max. frequency deviation | | ±5.0 kHz | | |
| | Spurious emissions | | Less than –60 dB | | |
| | Microphone impedance | | 600 Ω | | |
| RECEIVER | Receive system | | Double-conversion superheterodyne | | |
| | Intermediate frequencies | | 1st: 17.2 MHz ; 2nd: 455 kHz | 1st: 30.85 MHz ; 2nd: 455 kHz | |
| | Sensitivity (12 dB SINAD) | | Less than 0.16 μV (typical) | | |
| | Squelch sensitivity | | Less than 0.13 μV (at threshold) | | |
| | Selectivity | | More than 15 kHz/–6 dB, Less than 30 kHz/–60 dB | | |
| | Spurious response rejection ratio | | More than 60 dB (more than 45 dB at 1/2 IF) | | |
| | Audio output power (at 13.5 V) | | More than 2.4 W (at 10 % distortion with an 8 Ω load) | | |
| Audio output impedance | | 8 Ω | | | |

All stated specifications are subject to change without notice or obligation.

SECTION 2 INSIDE VIEWS

● MAIN UNIT

*: Located under side of this point.



3-1 RECEIVER CIRCUITS

3-1-1 DUPLEXER CIRCUIT

The transceiver has a duplexer (low-pass and high-pass filter) on the first stage from the antenna connector to separate the received signals into VHF and UHF signals. The low-pass filter (L39–L41, C160–C162) is for VHF signals and the high-pass filter (C1–C3, L1, L2) is for UHF signals. The separated signals are applied to each RF circuit.

3-1-2 VHF ANTENNA SWITCHING CIRCUIT

The antenna switching circuit functions as a low-pass filter while receiving. However, its impedance becomes very high while transmitting by turning ON diodes (D34, D35). Thus transmit signals are blocked from entering the receiver circuits. The antenna switching circuit employs a $1/4 \lambda$ type diode switching system. The passed signals are then applied to the RF amplifier circuit.

3-1-3 VHF RF CIRCUIT

The RF circuit amplifies signals within the range of frequency coverage and filters out-of-band signals.

The signals from the antenna switching circuit pass through a bandpass filter (D38, L60), and are applied to the RF amplifier (Q53). The amplified signals are passed through the next stage bandpass filter (D40, D41, D44) to suppress unwanted signals. The filtered signals are then applied to the 1st mixer circuit (Q54).

Varactor diodes (D38, D40, D41, D44) are used for the bandpass filters to tune the center frequency for wide bandwidth receiving and good image response rejection. PLL lock voltages are applied to these diodes for tuning.

3-1-4 VHF 1ST MIXER AND 1ST IF CIRCUITS

The 1st mixer circuit converts the received signals to a fixed frequency of the 1st IF signal with a PLL output frequency. By changing the PLL frequency, only the desired frequency will be passed through a pair of crystal filters at the next stage of the 1st mixer.

The signals are mixed with a 1st LO signal at the mixer circuit (Q54) to produce a 17.2 MHz 1st IF signal. The 1st LO signal is the PLL output frequency which comes from the VHF-VCO circuit (Q46).

The 1st IF signal is passed through a pair of crystal filters (FI4) to suppress out-of-band signals and then amplified at the IF amplifier (Q55). The amplified signal is applied to the 2nd mixer circuit (IC17).

3-1-5 VHF 2ND IF AND DETECTOR CIRCUIT

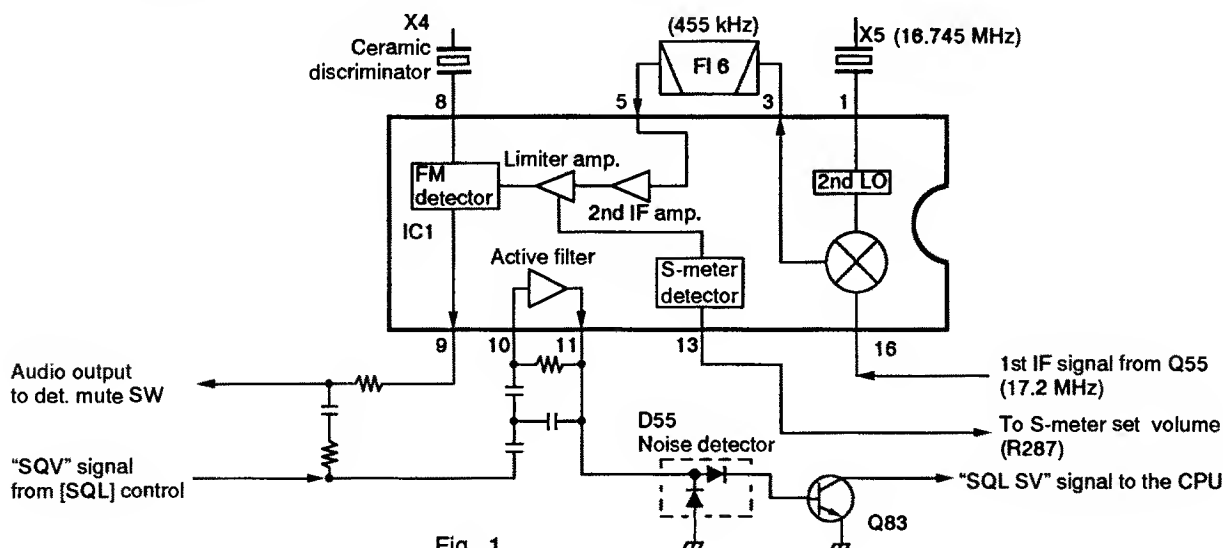
The 2nd mixer circuit converts the 1st IF signal to a 2nd IF signal. A double superheterodyne system (which converts receive signals twice) improves the image rejection ratio and obtains stable receiver gain.

IC17 contains the 2nd mixer circuit, 2nd LO circuit, limiter amplifier circuit, quadrature detector circuit and squelch trigger circuit.

The 1st signal from FI4 is applied to the 2nd mixer section of IC17 (pin 16), and mixed with a 16.745 MHz 2nd LO signal generated by X5 to produce a 455 kHz 2nd IF signal.

The FM detector circuit employs the quadrature detection method (linear phase detection), which uses a ceramic discriminator (X4) for phase delay to obtain a non-adjusting circuit. The detected signals from IC17 (pin 9) are applied to the AF circuit.

FM DETECTOR AND SQUELCH CIRCUITS



3-1-6 AF AMPLIFIER CIRCUIT

The AF amplifier circuit amplifies the detected signals to drive a speaker. For the separate speaker function, a stereo power amplifier is used.

AF signals are passed through the detector switch (Q82), then the analog switch (IC18 pins 2, 1). AF signals from IC18 (pin 1) are applied to the active filter (Q85, Q86) which functions as a high-pass filter to suppress subaudible tone signals for tone squelch operation.

The filtered signals pass through the [VOL] control (R332) and are then applied to the AF power amplifier (IC19 pin 2). The output signals are applied to an external speaker jack. When no plug is connected to the jack the signals are fed back to the UHF audio input (IC19 pin 8) and combined with the UHF audio. The mixed audio is applied to the other external speaker jack and then to the internal speaker.

3-1-7 VHF NOISE SQUELCH

A noise squelch circuit cuts out AF signals when no RF signal is received. By detecting noise components in the AF signal, the squelch circuit switches the AF mute switches.

Some of the noise components in the AF signals from IC17 (pin 9) are passed through the active filter section (IC17 pins 10, 11), and then applied to the noise detector circuit (D55). The [SQL] control adjusts the input level of the active filter.

The rectified voltage triggers the squelch switch (Q83). The squelch switch sets the "SQL SV" line "LOW" to apply the signal to the CPU (IC2 pin 15). Then the CPU controls AF mute switches (IC18, Q89) via the "VA MUTE" line and the I/O expander (IC21).

3-1-8 VHF SQUELCH ATTENUATOR CIRCUIT

The current flow of the antenna switching circuit (D34, D35) is controlled by the [SQL] control and the DC amplifier (IC25). When the [SQL] control is set too deep, the current of D34 and D35 is increased. In this case, D34 and D35 act as attenuators.

3-1-9 UHF RF CIRCUIT

The UHF RF signals are passed through part of a duplexer (high-pass filter; C1–C3, L1, L2). The signals are again passed through the low-pass filter (C5, C6, L3, L4), antenna switching circuit (D1, D12, D13), and then amplified at the RF amplifiers (Q16, Q17). Bandpass filters (F11, F12) are used at the last stage of these amplifiers.

3-1-10 UHF 1ST MIXER AND 1ST IF CIRCUIT

The filtered signals from the bandpass filter (F12) are mixed with a 1st LO signal at the mixer circuit (Q18) to produce a 30.85 MHz 1st IF signal. The 1st LO signal is the PLL output frequency which comes from the UHF-VCO circuit (Q11). The 1st IF signal is passed through a pair of crystal filters (F13) to suppress out-of-band signals and then amplified at the IF amplifier (Q20).

3-1-11 UHF 2ND IF AND DETECTOR CIRCUIT

The IC16 incorporates the 2nd mixer, 2nd local oscillator, limiter amplifier, quadrature detector and S-meter detector circuit. The 2nd local oscillator section and X3 generate 30.395 MHz for the 2nd LO signal.

The amplified 1st IF signal is fed to the FM IF IC (IC16 pin 16) where the signal is converted into a 2nd IF signal, then AF signals.

The AF signals output from IC16 (pin 9) pass through the detector switch (Q72), analog switch (IC18 pins 10, 11) and then active filters (Q75, Q76).

3-1-12 UHF NOISE SQUELCH CIRCUIT

A portion of the AF signals from IC16 (pin 9) are passed through the noise amplifier (IC16 pins 10, 11), detected at D52, and then trigger the squelch switch (Q73). The trigger signal is applied to the CPU via the "SQL SU" line to control AF mute switches (IC18, Q87).

3-2 TRANSMITTER CIRCUIT

3-2-1 MICROPHONE AMPLIFIER CIRCUIT

The microphone amplifier circuit amplifies audio signals from the microphone to a level needed for the modulation circuit. The microphone amplifier circuit is commonly used for the both VHF and UHF bands.

The AF signals from the microphone are amplified at the IDC amplifier (IC23b pin 6) and then applied to the low-pass filter (IC23a pin 3). The output signals from IC23a (pin 1) are then separately applied to the VHF-VCO or UHF-VCO circuit as an "MOD" signal.

3-2-2 VHF MODULATION CIRCUIT

The modulation circuit modulates the VCO oscillating signal (RF signal) using the microphone audio signals.

The "MOD" signal changes the reactance of a diode (D32) to modulate the oscillated signal at the VHF-VCO circuit (Q46, D31). The VCO output is buffer-amplified at Q45 and is then applied to the transmit/receive switching circuit (D71).

3-2-3 VHF DRIVE AMPLIFIER CIRCUIT

The drive amplifier circuit amplifies the VCO oscillated signal to the needed level at the power amplifier.

The signal from the transmit/receive switching circuit (D71) is amplified at the buffer amplifier (Q65, Q39). The amplified signal is amplified again at drive amplifiers (Q35, Q38) to obtain approx. 26 dBm.

3-2-4 VHF POWER AMPLIFIER CIRCUIT

IC9 is a power module which provides more than 50 W of output power with a 13.8 V DC power source.

An RF signal from the drive amplifier (Q35) is applied to IC9. The amplified signal is then applied to the antenna connector via the transmit/receive switching circuit (D24) and low-pass filter.

3-2-5 VHF APC CIRCUIT

The APC circuit protects the power module (IC9) from a mismatched output load.

The APC detector circuit (D25, D26) detects forward signals and rectified signals at D26 and D25 respectively. The combined voltage is at a minimum level when the antenna is matched at 50 Ω and increases when it is mismatched. The combined voltage is applied to the inverting amplifier (IC8) to control the base of Q1 and input current of Q2. Thus the bias voltage of IC 9 is decreased via Q2.

3-2-6 UHF MODULATION CIRCUIT

The audio signals from the microphone amplifier circuit (described in Section 4-2-1) are applied to the UHF-VCO circuit.

The audio signals change the reactance of the oscillator (Q11) to modulate the oscillated signal directly. The oscillated signal is amplified at the buffer amplifiers (Q8–Q10) and is then applied to the drive amplifier circuit (Q106, Q3, Q4) through the LO switch circuit (D6, D79).

3-2-7 UHF POWER AMPLIFIER CIRCUIT

IC2 is a power module which provides a stable 35 W (at 13.8 V DC) of output power.

The drive amplifier (Q3, Q4) and power amplifier (IC2) amplify the VCO oscillating signal to an output level. The output signal passes through the APC detector circuit (D2, D3) and bandpass filter, and is applied to the antenna connector.

3-2-8 UHF APC CIRCUIT

The APC circuit detects the output signals from the power module. IC1 compares the voltages detected by the APC detector with the reference voltages. When the detected voltage exceeds a reference voltage, IC1 reduces the bias current of IC2 (pin 4) using Q1 and Q2 to decrease the RF output power.

3-3 PLL CIRCUIT

3-3-1 GENERAL

A PLL circuit provides stable oscillation of the transmit frequency and the receive local frequency. The PLL circuit compares the phase of the divided VCO frequency to the reference frequency. The PLL output frequency is controlled by a crystal oscillator and the divided ratio of the programmable divider. IC6 is a dual PLL IC which controls both VCO circuits for VHF and UHF.

The PLL circuit, using a one chip PLL IC (IC6), directly generates the transmit frequency and receive 1st IF frequency with VCOs. The PLL sets the divided ratio based on serial data from the CPU on the LOGIC unit and compares the phases of VCO signals with the reference oscillator frequency. The PLL IC detects the out-of-step phase and output from pins 8 and 13 for VHF and UHF, respectively. The reference frequency (12.8 MHz) is oscillated at X1.

APC CIRCUIT

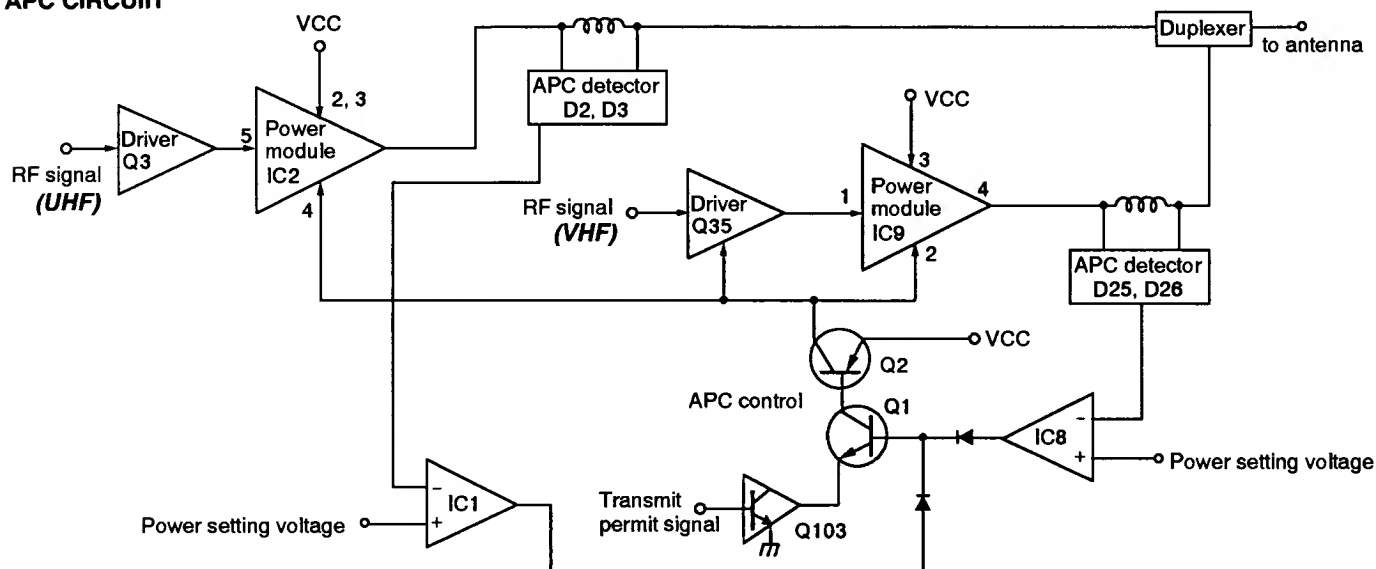


Fig. 2

3-3-2 VHF LOOP

The generated signal at the VHF-VCO (Q46, D31, D32) enters the PLL IC (IC6 pin 6) and is divided at the programmable divider section and is then applied to the phase detector section.

The phase detector compares the input signal with a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 8.

The pulse-type signal is converted into DC voltage (lock voltage) at the active loop filter (Q43, Q44), and then applied to varactor diodes (D31, D32) of the VHF-VCO to stabilize the oscillated frequency.

The lock voltage is also used for the receiver circuit for the bandpass filter center frequency. The lock voltage from Q43 is amplified at buffer amplifiers (Q41, Q40) and then applied to the RF circuit.

3-3-3 UHF LOOP

The generated signal at the UHF-VCO (Q11, D9, D10) enters the PLL IC (IC6 pin 15) and is divided at the programmable divider section and is then applied to the phase detector section.

The phase detector compares the input signal and a reference frequency, and then outputs the out-of-phase signal (pulse-type signal) from pin 13.

The pulse-type signal is converted into DC voltage (lock voltage) at the active loop filter (Q12, Q13), and then applied to varactor diodes (D9, D10) of the UHF-VCO to stabilize the oscillated frequency.

3-4 POWER SUPPLY CIRCUIT

3-4-1 VOLTAGE LINES (MAIN UNIT)

| LINE | DESCRIPTION |
|-------|---|
| 13 V | 13 V controlled by the power switching circuit (Q56, Q57). When the [POWER] switch is pushed, the CPU outputs the control signal to the power switching circuit to turn the circuit ON. |
| 8 V | Common 8 V is converted from 13 V line by the 8 V regulator (IC12). |
| +L5 V | Common 5 V for the CPU on the LOGIC unit. +L5 V is produced at IC11 of the MAIN unit from external DC input directly regardless of the power ON/OFF condition. |
| +S5 V | Common 5 V for the LCD driver IC (IC 2, LOGIC) and optional tone squelch unit (UT-89). +S5 V is converted from the 13 V line by the +S5 V regulator IC (IC14). |
| VR8 V | VR8 V is produced from 8 V at Q49 and Q50 using a control signal from the shift register (IC22 pin 4). |
| VT8 V | VT8 V is produced from 8 V at Q47, Q48 and D33. Shift register (IC22 pin 14) controls Q47 and Q48. |
| UR8 V | UR8 V is produced from 8 V at Q29 and Q30 using a control signal from the shift register (IC21 pin 4). |
| UT8 V | UT8 V is produced from 8 V at Q14, Q15 and D11. Shift register (IC21 pin 14) controls Q14 and Q15. |

3-4-2 DC-DC CONVERTOR CIRCUIT

The DC-DC convertor circuit (IC13, Q58, Q59) has a variable output type switching regulator, which makes a wider frequency band coverage VCO. Approx. 30 V of output voltage is produced from 8 V.

PLL CIRCUIT

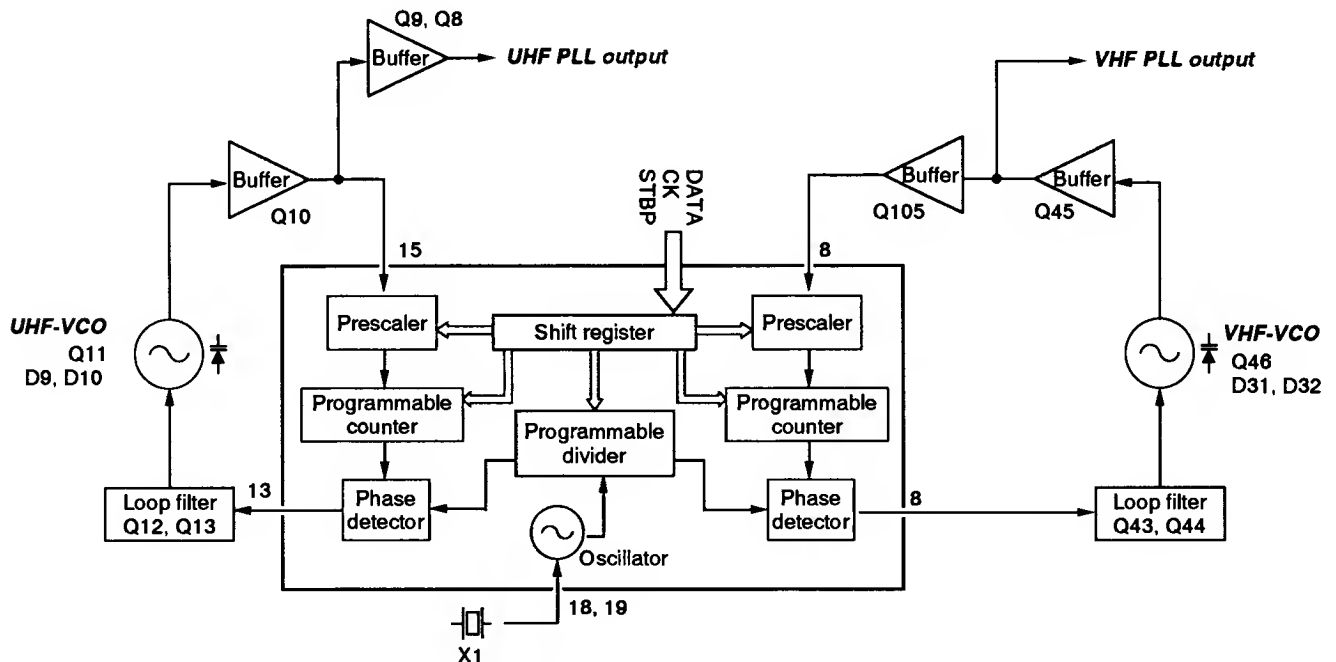


Fig. 3

3-5 OTHER CIRCUITS

3-5-1 TONE SQUELCH UNIT (OPTIONAL UNIT UT-89)

The receive signal from the DET V (DET U) signal line is applied to pin 1 of IC1 (IC2). The signal is compared with the programmed tone signal. Pin 14 of IC1 (IC2) becomes "LOW" when the matched tone is decoded.

3-5-2 DTMF ENCODER/DECODER UNIT (OPTIONAL UNIT UT-101)

ENCODER CIRCUIT

The programmed DTMF code signals are output from the pin 20 of IC2. DTMF code data is supplied from the CPU directly.

DECODER CIRCUIT

The received DTMF signals from the DET signal line are applied to pin 2 of IC1. The signals are compared with the programmed DTMF code signals, and un-muted data is applied to the CPU (IC2) directly when a matched DTMF code is received.

The IC3 is a data convertor IC for the DTMF encoder IC (IC2) and X1 is a reference oscillator for IC1 and IC2.

3-6 PORT ALLOCATIONS

3-6-1 CPU (LOGIC UNIT)

| Pin number | Port name | Description |
|------------|-----------|---|
| 1 | MU/D | Inputs a mic up/down signal. |
| 7 | RESET | Input port for a reset signal. |
| 12 | STB1 | Outputs a strobe signal to I/O expander ICs (IC21, IC22). |
| 13 | STBP | Outputs a strobe signal to the PLL IC (IC6). |
| 14 | UNLKV | Input port for the VHF PLL unlocking signal from the PLL IC (IC6). "HIGH" : When PLL is unlocked. |
| 15 | SQLSV | Input port for the VHF noise squelch condition. "HIGH" : Squelch open "LOW" : Squelch close |
| 16 | VAMUTE | Outputs VHF AF mute signal to the mute control circuits (IC20, Q89). "HIGH" : AF mute "LOW" : AF un-mute |
| 17 | UAMUTE | Outputs UHF AF mute signal to the mute control circuits (IC20, Q88). "HIGH" : AF mute "LOW" : AF un-mute |
| 18 | UNLKU | Input port for the UHF PLL unlocking signal from the PLL IC (IC6). "HIGH" : When PLL is unlocked. |
| 19 | SQLSU | Input port for the UHF noise squelch condition. "HIGH" : Squelch open "LOW" : Squelch close |
| 20 | POWER | Outputs "HIGH" or "LOW" signal to the power switch control circuit (Q56, Q57). "HIGH" : Power ON |
| 25 | MREMO | Outputs "HIGH" or "LOW" signal to the DTMF selector circuit. "HIGH" : Select received signal. "LOW" : Select microphone signal. |
| 27 | MMUTE | Outputs microphone mute signal. "HIGH" : Mic mute |
| 28 | OPTD | Inputs "LOW" level signal when optional DTMF unit is installed. |
| 33 | VUP | Input port for the VHF dial up signal. |
| 34 | VDN | Input port for the VHF dial down signal. |
| 35 | VCK | Input port for the VHF dial clock signals. |
| 36 | PTT | Input port for the [PTT] switch. "HIGH" : [PTT] is pushed. |
| 37 | BEEP | Beep output port. |
| 39 | EECK | Outputs the clock signals for the EEPROM (LOGIC IC3). |

3-6-2 I/O EXPANDERS

• MAIN UNIT (IC21)

| Pin number | Port name | Description |
|------------|--------------|---|
| 40 | EEDATA | Outputs the serial data for the EEPROM (LOGIC IC3). |
| 42 | CK | Outputs the clock signals. |
| 43 | FANC | Cooling fan control signal output. "HIGH" : Cooling fan is active. |
| 44 | DATA | Outputs serial data. |
| 45 | UUP | Input port for the UHF dial up signal. |
| 46 | UDN | Input port for the UHF dial down signal |
| 47 | UCK | Input port for the UHF dial clock signals. |
| 48 | POWER | Input port for the [POWER] switch. "HIGH" : [POWER] is pushed. |
| 49, 50 | DIM0, DIM1 | Output ports for LCD backlight dimmer control signals. |
| 51–53 | INIS0 –INIS2 | Output ports for initial matrix strobe signal. |
| 54–56 | KEYS0 –KEYS2 | Output ports for switch matrix strobe signal. |
| 57–60 | KEYI0 –KEYI3 | Input ports for matrix signals. |
| 61 | SET | Input port for [SET/LOCK] switch. "LOW" : [SET/LOCK] switch is pushed. |
| 62 | TSQLV | Input port for the VHF tone squelch conditions. "LOW" : When matched tone is received. |
| 63 | TSQLU | Input port for the UHF tone squelch conditions. "LOW" : When matched tone is received. |
| 64 | UNIT T | Inputs "HIGH" level signal when the tone squelch unit is installed. |
| 65–68 | Q1–Q4 | Input ports for the DTMF decode data signal. |
| 69–72 | TONE0 –TONE3 | Output ports for the CTCSS tone signal data. |
| 73 | STD | Input port for the DTMF decoder, detects Q0–Q3 when "HIGH" level signal is applied. |
| 74 | STBOD | Outputs the strobe data to optional DTMF unit. |
| 75 | STBTV | Outputs the strobe signal to an optional tone squelch unit on VHF band. |
| 76 | STBTU | Outputs the strobe signal to an optional tone squelch unit on UHF band. |
| 79 | SMV | Input port for the VHF S-meter. |
| 80 | SMU | Input port for the UHF S-meter. |

| Pin number | Port name | Description |
|------------|------------|---|
| 7 | CONT.D | Output for UHF detected AF signal mute control. "HIGH" : AF signal go to AF amp. |
| 12, 13 | ULP2, ULP1 | Outputs for UHF RF output power control. |
| 14 | UTX | Output for UHF transmitter control. "HIGH" : Transmit "LOW" : Receive (and transmit mute) |

• MAIN UNIT (IC22)

| Pin number | Port name | Description |
|------------|------------|---|
| 7 | CONT.A | Output for VHF detected AF signal mute control. "HIGH" : AF signal go to AF amp. |
| 12, 13 | VPL2, VLP1 | Outputs for VHF RF output power control. |
| 14 | VTX | Output for VHF transmitter control. "HIGH" : Transmit "LOW" : Receive (and transmit mute) |

SECTION 4 DISASSEMBLY INSTRUCTIONS

● Preparation for the disassembly

- ① Turn power OFF, then disconnect the DC cable.
- ② Unscrew 1 screw (A) as shown Fig 1, then remove the bottom cover.
- ③ Disconnect the speaker cable from "J4".
- ④ Lift up the clip part of the SP plate (at IC19) then remove the SP plate.
- ⑤ Remove the bush of DC cable from the chassis.
- ⑥ Unsolder jumper leads from the antenna connector (3 points).

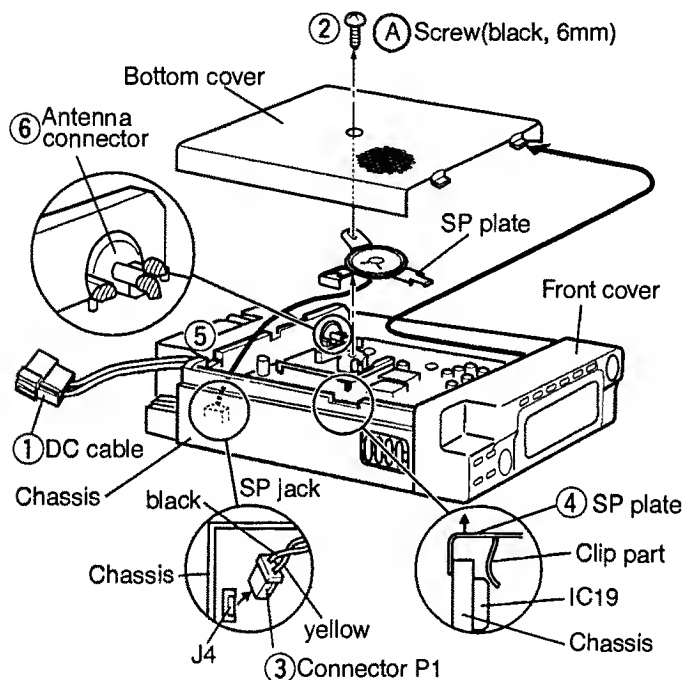


Fig 1

● Removing the front cover

- ⑦ Remove each the [DIAL], [VOL], [SQL] knobs and the 2 nuts (B), 2 hexagonal nuts (C) and 2 sheets (D) on the [SQL] knobs.
- ⑧ The front panel is hooked at 5 spots (↓) through the chassis. Push a part of the hook with tweezers to separate the front cover from the chassis.

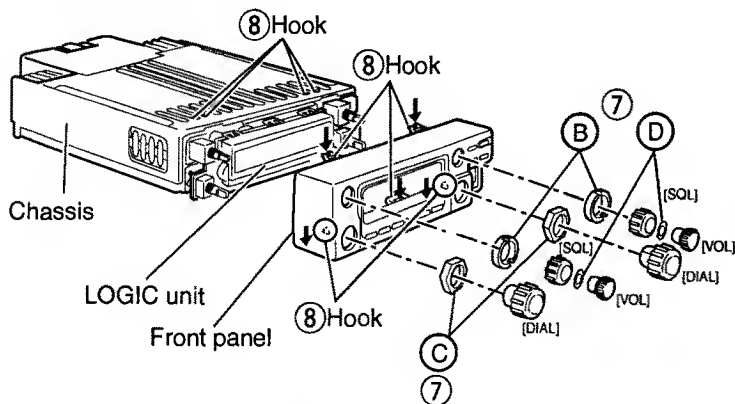


Fig 2

● Removing the LOGIC unit

- ⑨ Remove the LOGIC unit in the direction of the arrow.

NOTE: The connectors (J7, J8) disconnect from the chassis.

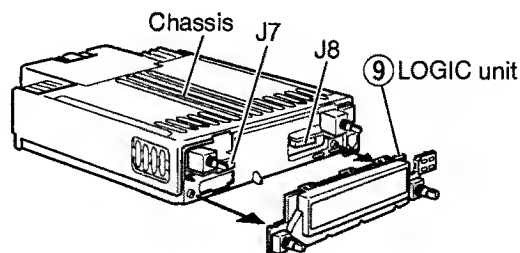


Fig 3

● Removing the MAIN unit

- ⑩ Remove the TR clip in the direction of the arrow, then unscrew 4 screws (E) and 6 screws (F).
- ⑪ Disconnect J5 on the MAIN unit, to separate the MAIN unit from the chassis.

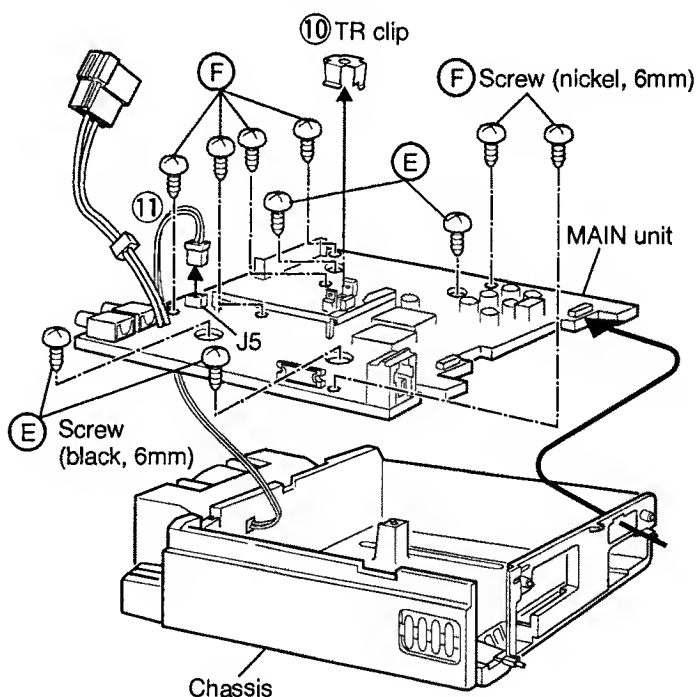


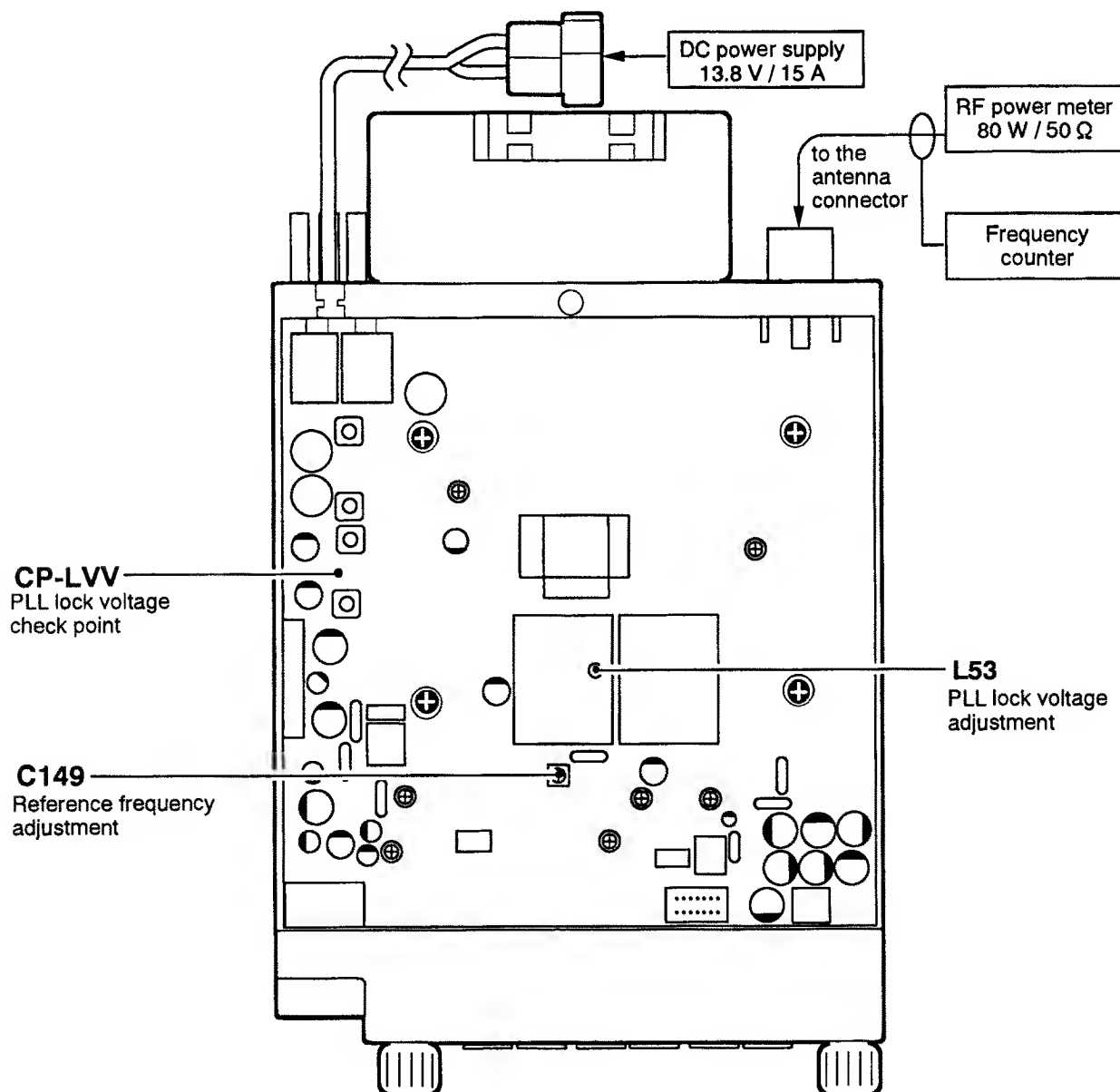
Fig 4

SECTION 5

ADJUSTMENT PROCEDURES

5-1 PLL ADJUSTMENT

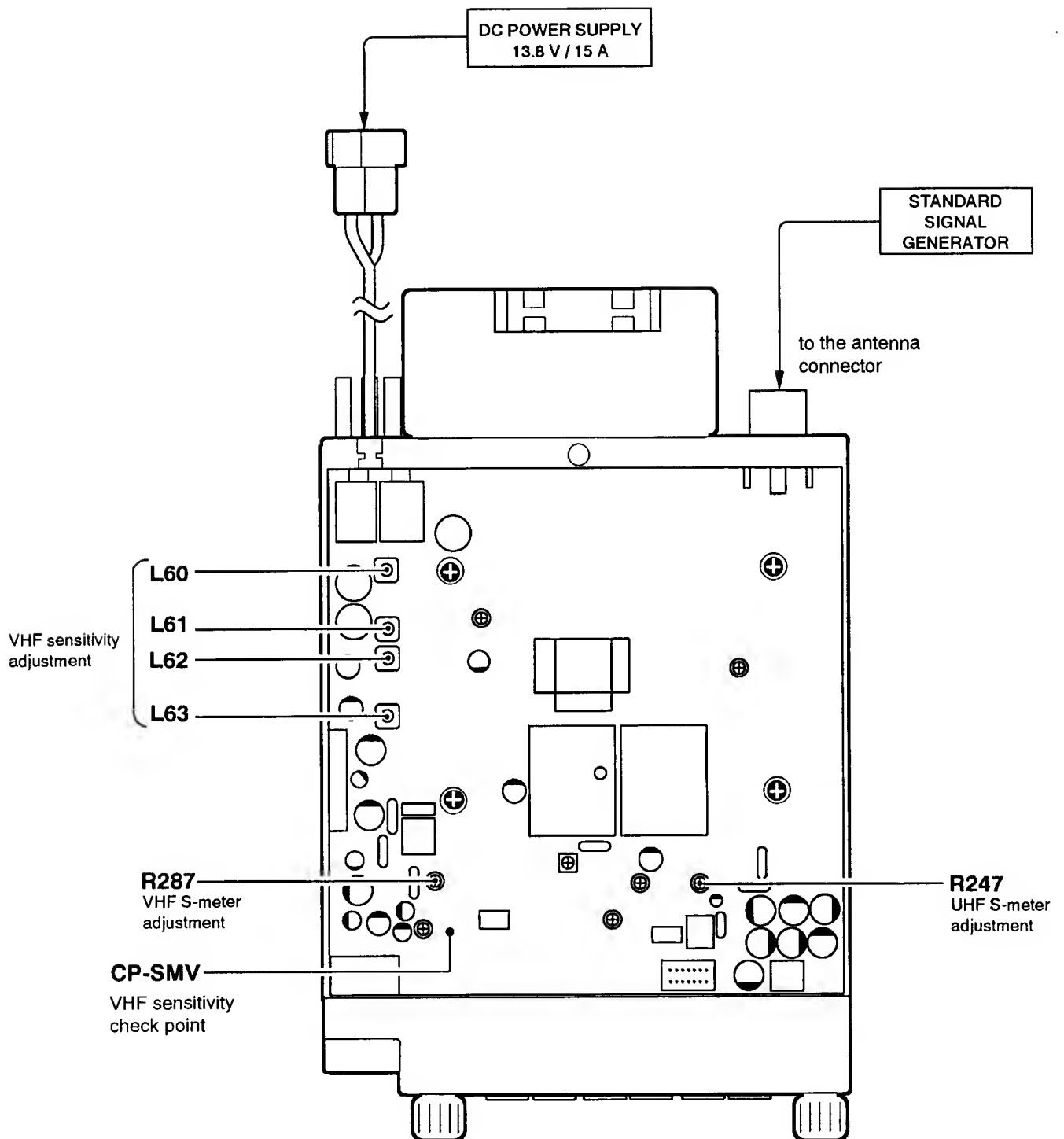
| ADJUSTMENT | | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT | |
|-------------------------|---|--|-------------|--|-------------|------------|--------|
| | | | UNIT | LOCATION | | UNIT | ADJUST |
| PLL REFERENCE FREQUENCY | 1 | <ul style="list-style-type: none"> • UHF display: 440.000 MHz • Connect the RF power meter or a 50 Ω dummy load to the antenna connector. • Simplex • Transmitting | Rear panel | Loosely couple the frequency counter to the antenna connector. | 440.000 MHz | MAIN | C149 |
| PLL LOCK VOLTAGE | 1 | <ul style="list-style-type: none"> • VHF display: 145.000 MHz • Receiving | MAIN | Connect the DC voltmeter to CP-LVV | 9.5 V | MAIN | L53 |



5-2 RECEIVER ADJUSTMENT

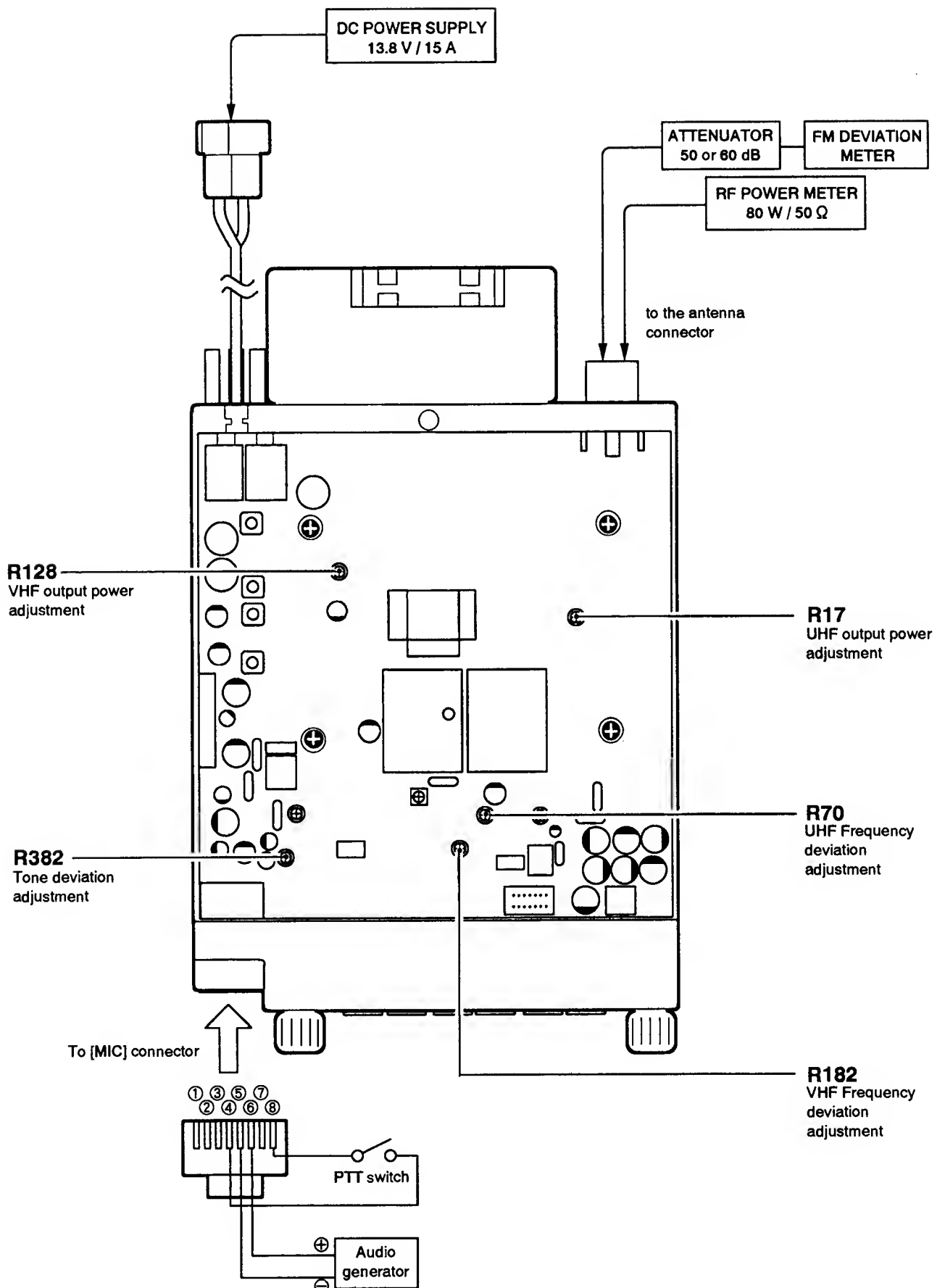
| ADJUSTMENT | | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT POINT | |
|-----------------|---|--|-------------|------------------------------------|--------------------|------------------|--------------------------------------|
| | | | UNIT | LOCATION | | UNIT | ADJUST |
| VHF SENSITIVITY | 1 | <ul style="list-style-type: none"> VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions) Connect the SSG to the antenna connector and set as: Level : 1.0 μV* (- 107 dBm) Deviation : \pm3.5 kHz Modulation : 1 kHz R287 (MAIN) : Max. CW Receiving | MAIN | Connect the DC voltmeter to CP-SMV | Maximum DC voltage | MAIN | Adjust in sequence L60, L61 L62, L63 |
| | | NOTE : Adjust standard signal generator output level so that the DC voltmeter needle remains at all times in the lowest 30 % of the full range. | | | | | |
| S-METER | 1 | <ul style="list-style-type: none"> VHF display: 146.000 MHz (USA, SEA versions) 145.000 MHz (All other versions) Connect the SSG to the antenna connector and set as: Level : 1.0 μV* (- 107 dBm) Deviation : \pm3.5 kHz Modulation : 1 kHz Receiving | Front panel | LCD display [V DISPLAY] | S3 (4 dots) | MAIN | R287 |
| | 2 | <ul style="list-style-type: none"> UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions) Connect the SSG to the antenna connector and set as: Level : 1.0 μV* (- 107 dBm) Deviation : \pm3.5 kHz Modulation : 1 kHz Receiving | | LCD display [U DISPLAY] | S3 (4 dots) | MAIN | R247 |

*This output level of the standard signal generator (SSG) is indicated as SSG's open circuit.



5-3 TRANSMITTER ADJUSTMENT

| ADJUSTMENT | | ADJUSTMENT CONDITIONS | MEASUREMENT | | VALUE | ADJUSTMENT | |
|------------------------|---|---|---------------|---|-----------|------------|--------|
| | | | UNIT | LOCATION | | UNIT | ADJUST |
| VHF OUTPUT POWER | 1 | <ul style="list-style-type: none"> VHF display: 148.000 MHz (USA, SEA versions) 145.000 MHz (All other versions) [HI/LOW] switch: HI. Simplex Transmitting | Rear panel | Connect the RF power meter to the antenna connector. | 50 W | MAIN | R128 |
| | 2 | [HI/LOW] switch : LOW1 | | | 3.5–7.5 W | | verify |
| | 3 | [HI/LOW] switch : LOW2 | | | 8–15 W | | |
| UHF OUTPUT POWER | 1 | <ul style="list-style-type: none"> UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions) [HI/LOW] switch: HI Transmitting | Rear panel | Connect the RF power meter to the antenna connector. | 35 W | MAIN | R17 |
| | 2 | [HI/LOW] switch : LOW1 | | | 3.5–7.5 W | | verify |
| | 3 | [HI/LOW] switch : LOW2 | | | 8–15 W | | |
| FREQUENCY DEVIATION | 1 | <ul style="list-style-type: none"> VHF display: 148.000 MHz (USA, SEA versions) 145.000 MHz (All other versions) [HI/LOW] switch : HI [TONE] switch : OFF Connect the audio generator to the microphone connector and set as: 20 mV/1.0 kHz Set the FM deviation meter as: HPF : 50 Hz LPF : 20 kHz De-emphasis : OFF Detector : (P–P)/2 Transmitting | Rear panel | Connect the FM deviation meter to the antenna connector through the attenuator. | ± 4.8 kHz | MAIN | R182 |
| | 2 | <ul style="list-style-type: none"> UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions) | | | ± 4.8 kHz | MAIN | R70 |
| TONE DEVIATION | 1 | <ul style="list-style-type: none"> UHF display: 445.000 MHz (USA version) 435.000 MHz (All other versions) [TONE] switch : ON Apply no signal to the microphone connector. Set the tone frequency : 88.5 Hz Set the FM deviation meter as: HPF : OFF LPF : 20 kHz De-emphasis : OFF Detector : (P – P)/2 Transmitting | Rear panel | Connect the FM deviation meter to the antenna connector through the attenuator. | ± 0.8 kHz | MAIN | R382 |



SECTION 6 PARTS LIST

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|--------------|--|
| IC1 | 1130007650 | S.IC | LC75823W |
| IC2 | 1140005450 | S.IC | HD404449A50H |
| IC3 | 1190000280 | S.IC | 24LC08BTI/SN |
| IC4 | 1130005720 | S.IC | TC7W04F (TE12L) |
| IC5 | 1130007340 | S.IC | S-80745SL-A9-T1 |
| IC6 | 1130008550 | S.IC | TC7S08FU (TE85R) |
| IC7 | 1130008540 | S.IC | TC7S02FU (TE85R) |
| IC8 | 1130008890 | S.IC | TC7S04FU (TE85R) |
| Q1 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q2 | 1520000270 | S.TRANSISTOR | 2SB1182 TL Q |
| Q4 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q10 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| D2 | 1180000050 | S.DIODE | DAP202U T107 |
| D3 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D4 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D5 | 1750000390 | S.DIODE | 1SS353 TE-17 [EUR], [ITA], [AUS], [SEA] |
| D6 | 1710000800 | DIODE | 1SS254 [EUR], [ITA], [AUS], [SEA] |
| D7 | 1710000800 | DIODE | 1SS254 [EUR], [AUS] |
| D8 | 1750000390 | S.DIODE | 1SS353 TE-17 [USA], [EUR], [AUS], [SEA] |
| D9 | 1750000390 | S.DIODE | 1SS353 TE-17 [USA], [EUR], [AUS], [SEA] |
| D10 | 1750000390 | S.DIODE | 1SS353 TE-17 [USA], [ITA], [SEA] |
| D11 | 1750000390 | S.DIODE | 1SS353 TE-17 [ITA], [SEA] |
| D12 | 1750000390 | S.DIODE | 1SS353 TE-17 [USA], [SEA] |
| D14 | 1750000220 | S.DIODE | DA113W T107 [USA], [EUR], [ITA] |
| | 1750000240 | S.DIODE | DA112 T107 [AUS], [SEA] |
| D15 | 1750000220 | S.DIODE | DA113W T107 [EUR], [ITA] |
| D16 | 1180000060 | S.DIODE | DAN202U T107 |
| D17 | 1180000060 | S.DIODE | DAN202U T107 |
| D18 | 1180000060 | S.DIODE | DAN202U T107 |
| D19 | 1180000060 | S.DIODE | DAN202U T107 |
| D20 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D21 | 1790001200 | S.DIODE | MA6S121(TX) |
| X1 | 8050009300 | S.XTAL | CR-505 (4 MHz) |
| R1 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R3 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R4 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R5 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R6 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R7 | 7030003450 | S.RESISTOR | ERJ3GEYJ 122 V (1.2 kΩ) |
| R8 | 7030003480 | S.RESISTOR | ERJ3GEYJ 222 V (2.2 kΩ) |
| R10 | 7030001130 | S.RESISTOR | MCR50JZHJ 100 Ω (101) |
| R12 | 7030000100 | S.RESISTOR | MCR10EZJH 4.7 Ω (4R7) |
| R13 | 7030000020 | S.RESISTOR | MCR10EZJH 1 Ω (010) |
| R14 | 7030000100 | S.RESISTOR | MCR10EZJH 4.7 Ω (4R7) |
| R15 | 7030000020 | S.RESISTOR | MCR10EZJH 1 Ω (010) |
| R16 | 7030003600 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R17 | 7030003580 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R18 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R19 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R21 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R22 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|-------------------------|
| R23 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R24 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R28 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R27 | 7030003780 | S.RESISTOR | ERJ3GEYJ 474 V (470 kΩ) |
| R28 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R29 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R30 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R31 | 7030003640 | S.RESISTOR | ERJ3GEYJ 225 V (2.2 MΩ) |
| R32 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R35 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R36 | 7030003800 | S.RESISTOR | ERJ3GEYJ 105 V (1 MΩ) |
| R38 | 7030003580 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R39 | 7030003740 | S.RESISTOR | ERJ3GEYJ 334 V (330 kΩ) |
| R40 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R41 | 7030003720 | S.RESISTOR | ERJ3GEYJ 224 V (220 kΩ) |
| R42 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R43 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R44 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R45 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R46 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R47 | 7030003660 | S.RESISTOR | ERJ3GEYJ 883 V (88 kΩ) |
| R48 | 7030003690 | S.RESISTOR | ERJ3GEYJ 124 V (120 kΩ) |
| R49 | 7030003720 | S.RESISTOR | ERJ3GEYJ 224 V (220 kΩ) |
| R50 | 7030003780 | S.RESISTOR | ERJ3GEYJ 474 V (470 kΩ) |
| R51 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R52 | 7030003800 | S.RESISTOR | ERJ3GEYJ 105 V (1 MΩ) |
| R53 | 7030003800 | S.RESISTOR | ERJ3GEYJ 105 V (1 MΩ) |
| R54 | 7030003880 | S.RESISTOR | ERJ3GEYJ 883 V (88 kΩ) |
| R55 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R56 | 7030003600 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R57 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R58 | 7030003690 | S.RESISTOR | ERJ3GEYJ 124 V (120 kΩ) |
| R59 | 7030003720 | S.RESISTOR | ERJ3GEYJ 224 V (220 kΩ) |
| R60 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R61 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R62 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R63 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R64 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R65 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R66 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R67 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R68 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R69 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R70 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R71 | 7030003780 | S.RESISTOR | ERJ3GEYJ 474 V (470 kΩ) |
| R72 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R73 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R74 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R75 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R76 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R77 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R78 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R79 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R80 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R81 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R82 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R83 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R84 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R85 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| C1 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C2 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C4 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C5 | 4030007030 | S.CERAMIC | C1808 CH 1H 150J-T-A |
| C6 | 4030007030 | S.CERAMIC | C1808 CH 1H 150J-T-A |
| C7 | 4030009000 | S.CERAMIC | C2012 JB 1C 224K-T-A |
| C8 | 4030008760 | S.CERAMIC | C2012 X7R 1C 104K-T-A |
| C9 | 4030009000 | S.CERAMIC | C2012 JB 1C 224K-T-A |
| C10 | 4510005590 | S.ELECTROLITIC | ECEV0JA331P |

S.=Surface mount

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|------------------------------------|
| C11 | 4030008630 | S.CERAMIC | C1608 JF 1C 104Z-T-A |
| C12 | 4030008680 | S.CERAMIC | C1608 JB 1H 102K-T-A |
| C13 | 4030008630 | S.CERAMIC | C1608 JF 1C 104Z-T-A |
| C14 | 4030008630 | S.CERAMIC | C1608 JF 1C 104Z-T-A |
| DS1 | 5030001260 | LCD | LD-HU4348E (E-4213) |
| DS2 | 5080000330 | LAMP | HRS-7219A-RE |
| DS3 | 5080000330 | LAMP | HRS-7219A-RE |
| DS4 | 5080000330 | LAMP | HRS-7219A-RE |
| DS5 | 5080000330 | LAMP | HRS-7219A-RE |
| S1 | 2250000260 | ENCODER | RH90N74AE20-15F-1647 |
| S2 | 2250000260 | ENCODER | RH90N74AE20-15F-1647 |
| S3 | 2260001890 | S.SWITCH | SKQDPA |
| S4 | 2260001890 | S.SWITCH | SKQDPA |
| S5 | 2260001890 | S.SWITCH | SKQDPA |
| S6 | 2260001890 | S.SWITCH | SKQDPA |
| S7 | 2260001890 | S.SWITCH | SKQDPA |
| S8 | 2260001890 | S.SWITCH | SKQDPA |
| S9 | 2260001890 | S.SWITCH | SKQDPA |
| S10 | 2260001890 | S.SWITCH | SKQDPA |
| S11 | 2260001890 | S.SWITCH | SKQDPA |
| S12 | 2260001890 | S.SWITCH | SKQDPA |
| J1 | 6510018290 | S.CONNECTOR | 5-175843-0 |
| J2 | 6510018290 | S.CONNECTOR | 5-175843-0 |
| J3 | 6510018570 | S.CONNECTOR | 52465-1291 |
| W1 | 7120000380 | JUMPER | JPW 01 R-01 [USA], [ITA], [SEA] |
| W2 | 7030003880 | S.JUMPER | ERJ3GE JPW V |
| EP1 | 0910044512 | PCB | B 4472B |
| EP2 | 8930037490 | LCD CONTACT | SRCN-1647-ZNN-L |
| EP3 | 8930037500 | LCD CONTACT | SRCN-1647-ZNN-S |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|--------------|--------------------|
| IC1 | 1110002750 | S.IC | TA75S01F (TE85R) |
| IC2 | 1150001620 | IC | SC-1318 |
| IC3 | 1130004200 | S.IC | TC4S66F (TE85R) |
| IC4 | 1110001971 | S.IC | μPC1678G-T1 |
| IC5 | 1110001971 | S.IC | μPC1678G-T1 |
| IC8 | 1130007780 | S.IC | M64078GP-600C |
| IC8 | 1110002750 | S.IC | TA75S01F (TE85R) |
| IC9 | 1150000760 | IC | SC1091 |
| IC10 | 1130004200 | S.IC | TC4S66F (TE85R) |
| IC11 | 1180000420 | S.IC | TA78L05F (TE12R) |
| IC12 | 1110002030 | IC | TA7806S |
| IC13 | 1110001700 | S.IC | TL499ACPS |
| IC14 | 1110002020 | IC | TA7805S |
| IC16 | 1110003570 | S.IC | MC3372VMEL |
| IC17 | 1110003570 | S.IC | MC3372VMEL |
| IC18 | 1130007690 | S.IC | BU4066BCF-T1 |
| IC19 | 1110002540 | IC | LA4445 |
| IC20 | 1130003780 | S.IC | TC4S81F (TE85R) |
| IC21 | 1130007700 | S.IC | BU4094BCF-T1 |
| IC22 | 1130007700 | S.IC | BU4094BCF-T1 |
| IC23 | 1110000980 | S.IC | NJM4558M(T1) |
| IC24 | 1110002750 | S.IC | TA75S01F (TE85R) |
| IC25 | 1110002750 | S.IC | TA75S01F (TE85R) |
| IC26 | 1130006890 | S.IC | TC7S04FU (TE85R) |
| IC27 | 1130007280 | S.IC | TC7S32FU(TE85R) |
| Q1 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q2 | 1510000900 | TRANSISTOR | 2SA1824 S |
| Q3 | 1530002340 | S.TRANSISTOR | 2SC2954-T2B |
| Q4 | 1530002880 | S.TRANSISTOR | 2SC3357-T2 |
| Q5 | 1590002270 | S.TRANSISTOR | UMG9N TL |
| Q7 | 1530002050 | S.TRANSISTOR | 2SC3661-TA |
| Q8 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q9 | 1530002900 | S.TRANSISTOR | 2SC4228-T2 |
| Q10 | 1530002900 | S.TRANSISTOR | 2SC4228-T2 |
| Q11 | 1580000650 | S.FET | 2SK1577-2-T7 |
| Q12 | 1530002490 | S.TRANSISTOR | 2SC3324-GR (TE85R) |
| Q13 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q14 | 1510000560 | S.TRANSISTOR | 2SA1382-GR (TE85R) |
| Q15 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q16 | 1580000490 | S.FET | 3SK166-2-T7 |
| Q17 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q18 | 1580000460 | S.FET | 3SK184-S (TX) |
| Q19 | 1590000680 | S.TRANSISTOR | DTC114EU T107 |
| Q20 | 1530002020 | S.TRANSISTOR | 2SC3770-3-TA |
| Q21 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q22 | 1580000480 | S.FET | 3SK184-S (TX) |
| Q23 | 1590000680 | S.TRANSISTOR | DTC114EU T107 |
| Q24 | 1530002900 | S.TRANSISTOR | 2SC4228-T2 |
| Q25 | 1590000980 | S.TRANSISTOR | DTB123EK T147 |
| Q26 | 1590002270 | S.TRANSISTOR | UMG9N TL |
| Q27 | 1590000980 | S.TRANSISTOR | DTB123EK T147 |
| Q29 | 1590000980 | S.TRANSISTOR | DTB123EK T147 |
| Q30 | 1590000880 | S.TRANSISTOR | DTC114EU T107 |
| Q35 | 1530002340 | S.TRANSISTOR | 2SC2954-T2B |
| Q36 | 1590002270 | S.TRANSISTOR | UMG9N TL |
| Q38 | 1530002680 | S.TRANSISTOR | 2SC3357-T2 |
| Q39 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q40 | 1510000510 | S.TRANSISTOR | 2SA1576 T107 R |
| Q41 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q42 | 1530002050 | S.TRANSISTOR | 2SC3661-TA |
| Q43 | 1530002490 | S.TRANSISTOR | 2SC3324-GR (TE85R) |
| Q44 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q45 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q46 | 1580000640 | S.FET | 2SK1740-TA |
| Q47 | 1510000580 | S.TRANSISTOR | 2SA1382-GR (TE85R) |
| Q48 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q49 | 1590000980 | S.TRANSISTOR | DTB123EK T147 |
| Q50 | 1590000880 | S.TRANSISTOR | DTC114EU T107 |
| Q53 | 1580000490 | S.FET | 3SK166-2-T7 |
| Q54 | 1580000480 | S.FET | 3SK184-S (TX) |
| Q55 | 1530002020 | S.TRANSISTOR | 2SC3770-3-TA |
| Q58 | 1520000270 | S.TRANSISTOR | 2SB1182 TL Q |
| Q57 | 1590002110 | S.TRANSISTOR | DTC143XU T107 |
| Q58 | 1540000250 | S.TRANSISTOR | 2SD999-T2 CK |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|--------------|--------------------|
| O59 | 1530001940 | S.TRANSISTOR | 2SC2712-BL (TE85R) |
| O82 | 1520000200 | S.TRANSISTOR | 2SB798-T2 DK |
| Q83 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q84 | 1580000490 | S.FET | 3SK188-2-T7 |
| O85 | 1530002580 | S.TRANSISTOR | 2SC4403-3-TR |
| O88 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q89 | 1590002220 | S.TRANSISTOR | DTA144VU T107 |
| Q70 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q71 | 1590001800 | S.TRANSISTOR | UMH2 TN |
| Q72 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q73 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q74 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q75 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q78 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q77 | 1590000430 | S.TRANSISTOR | DTC144EU T107 |
| Q78 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q79 | 1590002220 | S.TRANSISTOR | DTA144VU T107 |
| Q80 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q81 | 1590001800 | S.TRANSISTOR | UMH2 TN |
| Q82 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q83 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q84 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q85 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q88 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q87 | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R) |
| Q86 | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R) |
| Q89 | 1530003090 | S.TRANSISTOR | 2SC4213-B (TE85R) |
| Q90 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q91 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q92 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q93 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q94 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q95 | 1590000430 | S.TRANSISTOR | DTC144EU T107 |
| Q96 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q97 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q98 | 1590000430 | S.TRANSISTOR | DTC144EU T107 |
| Q99 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q100 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q101 | 1530002080 | S.TRANSISTOR | 2SC4081 T107 R |
| Q102 | 1590001450 | S.FET | 2SJ144-GR (TE85R) |
| Q103 | 1590001320 | S.TRANSISTOR | DTC143ZU T107 |
| Q105 | 1530002580 | S.TRANSISTOR | 2SC4403-3-TR |
| Q108 | 1530002920 | S.TRANSISTOR | 2SC4228-T2 R25 |
| Q107 | 1530002050 | S.TRANSISTOR | 2SC3881-TA |
| Q108 | 1590000430 | S.TRANSISTOR | DTC144EU T107 |
| Q109 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q110 | 1580000540 | S.FET | 2SK880-Y (TE85R) |
| Q111 | 1590000880 | S.TRANSISTOR | DTC114EU T107 |
| | | | |
| D1 | 1710000310 | DIODE | MI407 |
| D2 | 1790000980 | S.DIODE | MA742(TX) |
| D3 | 1790000980 | S.DIODE | MA742(TX) |
| D4 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D5 | 1790000620 | S.DIODE | MA77(TW) |
| D8 | 1790000820 | S.DIODE | MA77(TW) |
| D7 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D6 | 1730001120 | S.ZENER | RD24M-T2B2 |
| D9 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D10 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D11 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D12 | 1710000730 | S.DIODE | MI809-T11 |
| D13 | 1710000730 | S.DIODE | MI809-T11 |
| D14 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D15 | 1790000450 | S.DIODE | MA882(TX) |
| D16 | 1790000450 | S.DIODE | MA882(TX) |
| D17 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D18 | 1790001010 | S.ZENER | MA8043-L(TX) |
| D20 | 1790001010 | S.ZENER | MA8043-L(TX) |
| D21 | 1180000080 | S.DIODE | DAN202U T107 |
| D22 | 1730000490 | S.ZENER | RD8.8M-T2B2 |
| D23 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D24 | 1710000310 | DIODE | MI407 |
| D25 | 1790000980 | S.DIODE | MA742(TX) |
| D26 | 1790000980 | S.DIODE | MA742(TX) |
| D28 | 1750000390 | S.DIODE | 1SS353 TE-17 |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|---------------|---|
| D30 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D31 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D32 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D33 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D34 | 1710000730 | S.DIODE | MI809-T11 |
| D35 | 1710000730 | S.DIODE | MI809-T11 |
| D38 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D37 | 1790000590 | S.DIODE | MA110(TW) |
| D38 | 1720000480 | S.VARICAP | 1SV187-T1 |
| D39 | 1790000590 | S.DIODE | MA110(TW) |
| D40 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D41 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D42 | 1790000590 | S.DIODE | MA110(TW) |
| D43 | 1790000590 | S.DIODE | MA110(TW) |
| D44 | 1720000220 | S.VARICAP | 1SV188-T2B |
| D45 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D48 | 1730000490 | S.ZENER | RD8.8M-T2B2 |
| D47 | 1790000700 | DIODE | DSA3A1 |
| D48 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D50 | 1790001000 | S.ZENER | MA8082-L(TX) |
| D51 | 1790000980 | S.DIODE | MA742(TX) |
| D52 | 1790000980 | S.DIODE | MA742(TX) |
| D54 | 1790000980 | S.DIODE | MA742(TX) |
| D55 | 1790000980 | S.DIODE | MA742(TX) |
| D57 | 1180000050 | S.DIODE | DAP202U T107 |
| D58 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D59 | 1790001000 | S.ZENER | MA8082-L(TX) |
| D60 | 1750000070 | S.DIODE | 1SS228 (TE85R) |
| D63 | 1180000080 | S.DIODE | DAN202U T107 |
| D65 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D68 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D67 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D68 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D71 | 1790000450 | S.DIODE | MA882(TX) |
| D74 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D75 | 1730000800 | S.ZENER | RD3.3M-T2B2 |
| D78 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D77 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D76 | 1750000390 | S.DIODE | 1SS353 TE-17 |
| D79 | 1790000820 | S.DIODE | MA77(TW) |
| | | | |
| FI1 | 2040000780 | S.FILTER | HWCK001/445MHz [USA] |
| | 2040000750 | S.FILTER | HWCK002/435MHz [EUR], [ITA], [AUS], [SEA] |
| FI2 | 2040000780 | S.FILTER | HWCK001/445MHz [USA] |
| | 2040000750 | S.FILTER | HWCK002/435MHz [EUR], [ITA], [AUS], [SEA] |
| FI3 | 2010001810 | MONOLITHIC | FL-202 (30.850MHz) |
| FI4 | 2010001870 | XTAL | FL-207 (17.200MHz) |
| FI5 | 2020001090 | CERAMIC | KBF-455P-15A |
| FI6 | 2020001090 | CERAMIC | KBF-455P-15A |
| | | | |
| X1 | 6050009090 | XTAL | CR-489 (12.800MHz) |
| X2 | 6070000090 | DISCRIMINATOR | CDB455C18 |
| X3 | 6050008950 | XTAL | CR-478 (30.395MHz) |
| X4 | 6070000090 | DISCRIMINATOR | CDB455C18 |
| X5 | 6050008940 | XTAL | CR-477 (18.745MHz) |
| | | | |
| L1 | 8110001520 | COIL | LA-232 |
| L2 | 8110001520 | COIL | LA-232 |
| L3 | 8110002110 | COIL | LA-382 |
| L4 | 8110002130 | COIL | LA-383 |
| L5 | 8170000180 | COIL | LW-19 |
| L8 | 8110001520 | COIL | LA-232 |
| L9 | 8200003870 | S.COIL | NL 252018T-015J |
| L10 | 8200003530 | S.COIL | NL 252018T-012J |
| L11 | 6200003390 | S.COIL | LL2012-F12NK |
| L12 | 6200003560 | S.COIL | NL 252018T-018J |
| L15 | 6200001570 | S.COIL | LER 015T 1R0M |
| L18 | 6200001570 | S.COIL | LER 015T 1R0M |
| L17 | 6130002870 | S.COIL | LB-288 |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|-------------------------|
| L18 | 8200001230 | S.COIL | MLF2012A 1R0M-T |
| L19 | 6200001580 | S.COIL | LER 015T R68M |
| L20 | 8200001580 | S.COIL | LER 015T R68M |
| L21 | 8110001520 | COIL | LA-232 |
| L22 | 8110001520 | COIL | LA-232 |
| L23 | 8200000090 | S.COIL | LQN 2A 16NM |
| L24 | 6200000110 | S.COIL | LQN 2A 33NM |
| L25 | 8200000130 | S.COIL | LQN 2A 47NM |
| L26 | 8200000120 | S.COIL | LQN 2A 39NM |
| L27 | 6200002580 | S.COIL | NL 252016T-033J |
| L28 | 8200003280 | S.COIL | NL 252018T-2R2J |
| L29 | 8200002740 | S.COIL | LL2012-F6N8K |
| L30 | 8200002740 | S.COIL | LL2012-F6N8K |
| L31 | 8200002740 | S.COIL | LL2012-F6N8K |
| L32 | 6200003390 | S.COIL | LL2012-F12NK |
| L33 | 8200003390 | S.COIL | LL2012-F12NK |
| L34 | 6200002740 | S.COIL | LL2012-F6N8K |
| L35 | 8200003390 | S.COIL | LL2012-F12NK |
| L36 | 8200002740 | S.COIL | LL2012-F6N8K |
| L37 | 6200000110 | S.COIL | LQN 2A 33NM |
| L38 | 6200002800 | S.COIL | NL 252016T-047J |
| L39 | 6110002150 | COIL | LA-385 |
| L40 | 8110001550 | COIL | LA-235 |
| L41 | 8110001810 | COIL | LA-244 |
| L42 | 6170000180 | COIL | LW-19 |
| L43 | 8110001550 | COIL | LA-235 |
| L44 | 8110001550 | COIL | LA-235 |
| L45 | 8200002800 | S.COIL | NL 252016T-047J |
| L48 | 8200002420 | S.COIL | NL 252018T-088J |
| L47 | 8200002580 | S.COIL | NL 252018T-033J |
| L48 | 8200002420 | S.COIL | NL 252018T-088J |
| L49 | 8200002580 | S.COIL | NL 252018T-033J |
| L50 | 6200002600 | S.COIL | NL 252016T-047J |
| L51 | 6200002420 | S.COIL | NL 252018T-066J |
| L52 | 8200002000 | S.COIL | NL 252016T-3R3J |
| L53 | 6130002420 | S.COIL | LB-270 |
| L54 | 6200001580 | S.COIL | LER 015T 1R6M |
| L55 | 6200001580 | S.COIL | LER 015T 1R6M |
| L58 | 6200001580 | S.COIL | LER 015T 1R8M |
| L57 | 6200001230 | S.COIL | MLF2012A 1R0M-T |
| L56 | 6110001580 | COIL | LA-238 |
| L59 | 8110001580 | COIL | LA-236 |
| L60 | 8150004510 | S.COIL | LS-508 |
| L61 | 8150004510 | S.COIL | LS-508 |
| L62 | 8150004510 | S.COIL | LS-508 |
| L63 | 6150004510 | S.COIL | LS-508 |
| L64 | 6200002640 | S.COIL | NL 252016T-R15J |
| L67 | 8200004870 | S.COIL | NL 252018T-3R9J |
| L66 | 8160003020 | COIL | 5DS-101K |
| L69 | 8180002820 | COIL | RCR884D-101K |
| L70 | 8200002800 | S.COIL | NL 252018T-047J |
| L71 | 6200000110 | S.COIL | LQN 2A 33NM |
| L72 | 8200002090 | S.COIL | ELJFB 881K-F |
| L73 | 6200002090 | S.COIL | ELJFB 881K-F |
| L78 | 6200000100 | S.COIL | LQN 2A 22NM |
| L77 | 8200003880 | S.COIL | NL 252018T-022J |
| L78 | 6200002580 | S.COIL | NL 252018T-033J |
| L79 | 8200004080 | S.COIL | MLR1808M 16NJ-T |
| L80 | 8200004080 | S.COIL | MLR1808M 18NJ-T |
| R1 | 7030001130 | S.RESISTOR | MCR50JZHJ 100 Ω (101) |
| R2 | 7030003570 | S.RESISTOR | ERJ3GEYJ 123 V (12 kΩ) |
| R3 | 7030003570 | S.RESISTOR | ERJ3GEYJ 123 V (12 kΩ) |
| R5 | 7030003570 | S.RESISTOR | ERJ3GEYJ 123 V (12 kΩ) |
| R6 | 7030003820 | S.RESISTOR | ERJ3GEYJ 333 V (33 kΩ) |
| R7 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R8 | 7030003800 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R9 | 7030003790 | S.RESISTOR | ERJ3GEYJ 624 V (820 kΩ) |
| R10 | 7030003800 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R11 | 7030003810 | S.RESISTOR | ERJ3GEYJ 273 V (27 kΩ) |
| R12 | 7030003810 | S.RESISTOR | ERJ3GEYJ 273 V (27 kΩ) |
| R13 | 7030003800 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R14 | 7030001190 | S.RESISTOR | MCR50JZHJ 330 Ω (331) |
| R15 | 7030001040 | S.RESISTOR | MCR50JZHJ 18 Ω (180) |
| R17 | 7310003590 | S.TRIMMER | EVM-1XSX50 B24 (203) |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|-------------------------|
| R16 | 7030003530 | S.RESISTOR | ERJ3GEYJ 562 V (5.6 kΩ) |
| R19 | 7030003570 | S.RESISTOR | ERJ3GEYJ 123 V (12 kΩ) |
| R20 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R21 | 7030003360 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R22 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R23 | 7030000170 | S.RESISTOR | MCR10EZHZ 16 Ω (180) |
| R25 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R28 | 7030003420 | S.RESISTOR | ERJ3GEYJ 881 V (880 Ω) |
| R30 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R32 | 7030003270 | S.RESISTOR | ERJ3GEYJ 390 V (39 Ω) |
| R33 | 7030003340 | S.RESISTOR | ERJ3GEYJ 151 V (150 Ω) |
| R34 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R35 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R38 | 7030003280 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R37 | 7030003670 | S.RESISTOR | ERJ3GEYJ 823 V (82 kΩ) |
| R39 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R40 | 7030000370 | S.RESISTOR | MCR10EZHZ 620 Ω (821) |
| R41 | 7030003260 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R42 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R43 | 7030003880 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R45 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R48 | 7030003220 | S.RESISTOR | ERJ3GEYJ 150 V (15 Ω) |
| R47 | 7030003220 | S.RESISTOR | ERJ3GEYJ 150 V (15 Ω) |
| R48 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R49 | 7030003660 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R50 | 7030003470 | S.RESISTOR | ERJ3GEYJ 182 V (1.8 kΩ) |
| R52 | 7030003310 | S.RESISTOR | ERJ3GEYJ 620 V (62 kΩ) |
| R53 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R54 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R55 | 7030003280 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R56 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R57 | 7030003380 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R58 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R59 | 7030000460 | S.RESISTOR | MCR10EZHZ 4.7 kΩ (472) |
| R60 | 7030003410 | S.RESISTOR | ERJ3GEYJ 561 V (560 Ω) |
| R61 | 7030003410 | S.RESISTOR | ERJ3GEYJ 561 V (560 Ω) |
| R82 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R63 | 7030003550 | S.RESISTOR | ERJ3GEYJ 822 V (8.2 kΩ) |
| R65 | 7030003460 | S.RESISTOR | ERJ3GEYJ 222 V (2.2 kΩ) |
| R88 | 7030003480 | S.RESISTOR | ERJ3GEYJ 222 V (2.2 kΩ) |
| R87 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R66 | 7030003660 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R69 | 7030003540 | S.RESISTOR | ERJ3GEYJ 662 V (6.6 kΩ) |
| R70 | 7310003600 | S.TRIMMER | EVM-1XSX50 B54 (503) |
| R71 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R72 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R73 | 7030003620 | S.RESISTOR | ERJ3GEYJ 333 V (33 kΩ) |
| R74 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R75 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R78 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R77 | 7030003830 | S.RESISTOR | ERJ3GEYJ 393 V (39 kΩ) |
| R78 | 7030003200 | S.RESISTOR | ERJ3GEYJ 100 V (10 Ω) |
| R79 | 7030003520 | S.RESISTOR | ERJ3GEYJ 472 V (4.7 kΩ) |
| R80 | 7030003580 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R81 | 7030003800 | S.RESISTOR | ERJ3GEYJ 223 V (22 kΩ) |
| R82 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R83 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R64 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R85 | 7030003420 | S.RESISTOR | ERJ3GEYJ 861 V (860 Ω) |
| R88 | 7030003740 | S.RESISTOR | ERJ3GEYJ 334 V (330 kΩ) |
| R87 | 7030003260 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R86 | 7030003400 | S.RESISTOR | ERJ3GEYJ 471 V (470 Ω) |
| R89 | 7030003280 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R90 | 7030003630 | S.RESISTOR | ERJ3GEYJ 393 V (39 kΩ) |
| R91 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R92 | 7030003200 | S.RESISTOR | ERJ3GEYJ 100 V (10 Ω) |
| R93 | 7030000220 | S.RESISTOR | MCR10EZHZ 47 Ω (470) |
| R94 | 7030000220 | S.RESISTOR | MCR10EZHZ 47 Ω (470) |
| R95 | 7030003360 | S.RESISTOR | ERJ3GEYJ 221 V (220 Ω) |
| R96 | 7030003280 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R97 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R98 | 7030003440 | S.RESISTOR | ERJ3GEYJ 102 V (1 kΩ) |
| R99 | 7030003500 | S.RESISTOR | ERJ3GEYJ 332 V (3.3 kΩ) |
| R100 | 7030003260 | S.RESISTOR | ERJ3GEYJ 470 V (47 Ω) |
| R101 | 7030000220 | S.RESISTOR | MCR10EZHZ 47 Ω (470) |
| R102 | 7030000220 | S.RESISTOR | MCR10EZHZ 47 Ω (470) |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|------------------------------------|
| R103 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R105 | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω) |
| R108 | 7030003550 | S.RESISTOR ERJ3GEYJ 622 V (6.2 kΩ) |
| R110 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R111 | 7030001130 | S.RESISTOR MCR50JZHJ 100 Ω (101) |
| R112 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R113 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R115 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R116 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R116 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R119 | 7030003790 | S.RESISTOR ERJ3GEYJ 624 V (620 kΩ) |
| R120 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R125 | 7030001210 | S.RESISTOR MCR50JZHJ 470 Ω (471) |
| R126 | 7030001050 | S.RESISTOR MCR50JZHJ 22 Ω (220) |
| R127 | 7520000110 | S.POSISTOR PTH9C22 BD 471Q-T |
| R126 | 7310003610 | S.TRIMMER EVM-1XSX50 B14 (103) |
| R129 | 7030003470 | S.RESISTOR ERJ3GEYJ 162 V (1.6 kΩ) |
| R130 | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R133 | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) |
| R134 | 7030000220 | S.RESISTOR MCR10EZJH 47 Ω (470) |
| R136 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R137 | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R136 | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω) |
| R139 | 7030003270 | S.RESISTOR ERJ3GEYJ 390 V (39 Ω) |
| R140 | 7030003340 | S.RESISTOR ERJ3GEYJ 151 V (150 Ω) |
| R144 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R145 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R146 | 7030003420 | S.RESISTOR ERJ3GEYJ 661 V (660 Ω) |
| R147 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R146 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R149 | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω) |
| R150 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R151 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R152 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R153 | 7030003600 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R154 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R155 | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω) |
| R156 | 7030000460 | S.RESISTOR MCR10EZJH 4.7 kΩ (472) |
| R157 | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R156 | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω) |
| R159 | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R160 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R161 | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R162 | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R163 | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω) |
| R164 | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω) |
| R165 | 7030003220 | S.RESISTOR ERJ3GEYJ 150 V (15 Ω) |
| R166 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R167 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R169 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R170 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R171 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R172 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R173 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R174 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R175 | 7030003670 | S.RESISTOR ERJ3GEYJ 623 V (62 kΩ) |
| R176 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R177 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R176 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R179 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R180 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R161 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R162 | 7310003600 | S.TRIMMER EVM-1XSX50 B54 (503) |
| R163 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R164 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R166 | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R167 | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R166 | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) |
| R169 | 7030003240 | S.RESISTOR ERJ3GEYJ 220 V (22 Ω) |
| R190 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R191 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R192 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R193 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R194 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R195 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R196 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|------------------------------------|
| R196 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R199 | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω) |
| R200 | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R201 | 7030003470 | S.RESISTOR ERJ3GEYJ 162 V (1.6 kΩ) |
| R202 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R203 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R204 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R205 | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω) |
| R206 | 7030003530 | S.RESISTOR ERJ3GEYJ 562 V (5.6 kΩ) |
| R207 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R206 | 7030001210 | S.RESISTOR MCR50JZHJ 470 Ω (471) |
| R209 | 7030006450 | S.RESISTOR MCR50JZHJ 4.7 Ω (4R7) |
| R210 | 7030003360 | S.RESISTOR ERJ3GEYJ 221 V (220 Ω) |
| R211 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R212 | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R213 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R214 | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ) |
| R215 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R217 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R216 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R221 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R222 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R223 | 7030003660 | S.RESISTOR ERJ3GEYJ 663 V (66 kΩ) |
| R224 | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R225 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R231 | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R232 | 7030003470 | S.RESISTOR ERJ3GEYJ 162 V (1.6 kΩ) |
| R233 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R234 | 7030003450 | S.RESISTOR ERJ3GEYJ 122 V (1.2 kΩ) |
| R235 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R236 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R237 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R236 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R239 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R240 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R241 | 7030003430 | S.RESISTOR ERJ3GEYJ 621 V (620 Ω) |
| R242 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R243 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R244 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R245 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R246 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R247 | 7310003600 | S.TRIMMER EVM-1XSX50 B54 (503) |
| R246 | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ) |
| R249 | 7030003730 | S.RESISTOR ERJ3GEYJ 274 V (270 kΩ) |
| R250 | 7510001010 | S.THERMISTOR NTCCF2012 4CH 154KCT |
| R251 | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R252 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R253 | 7030003700 | S.RESISTOR ERJ3GEYJ 154 V (150 kΩ) |
| R254 | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R255 | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R256 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R257 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R256 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R259 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R260 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R261 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R262 | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R263 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R264 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R265 | 7030003360 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω) |
| R266 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R267 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R266 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R269 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R270 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R271 | 7030003460 | S.RESISTOR ERJ3GEYJ 152 V (1.5 kΩ) |
| R272 | 7030003470 | S.RESISTOR ERJ3GEYJ 162 V (1.6 kΩ) |
| R273 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R274 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R276 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R277 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R276 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R279 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R280 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R261 | 7030003430 | S.RESISTOR ERJ3GEYJ 621 V (620 Ω) |
| R262 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|--|
| R263 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R264 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R265 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R266 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R267 | 7310003800 | S.TRIMMER EVM-1XSX50 B54 (503) |
| R268 | 7030003820 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R269 | 7030003730 | S.RESISTOR ERJ3GEYJ 274 V (270 kΩ) |
| R290 | 7510001010 | S.THERMISTOR NTCF2012 4CH 154KCT |
| R291 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R292 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R293 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R294 | 7030003500 | S.RESISTOR ERJ3GEYJ 332 V (3.3 kΩ) |
| R295 | 7030003740 | S.RESISTOR ERJ3GEYJ 334 V (330 kΩ) |
| R296 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R297 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R298 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R299 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R300 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R301 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R302 | 7030003630 | S.RESISTOR ERJ3GEYJ 332 V (39 kΩ) |
| R303 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R304 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R305 | 7030003360 | S.RESISTOR ERJ3GEYJ 331 V (330 Ω) |
| R306 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R307 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R308 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R309 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R310 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R311 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R312 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R313 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R314 | 7030003780 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R315 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R316 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R317 | 7030003760 | S.RESISTOR ERJ3GEYJ 474 V (470 kΩ) |
| R318 | 7030003370 | S.RESISTOR ERJ3GEYJ 271 V (270 Ω) |
| R319 | 7030003770 | S.RESISTOR ERJ3GEYJ 564 V (580 kΩ) |
| R320 | 7030003570 | S.RESISTOR ERJ3GEYJ 123 V (12 kΩ) |
| R321 | 7030003350 | S.RESISTOR ERJ3GEYJ 181 V (180 Ω) |
| R322 | 7030000100 | S.RESISTOR MCR10EZHZ 4.7 Ω (4R7) |
| R323 | 7030000100 | S.RESISTOR MCR10EZHZ 4.7 Ω (4R7) |
| R324 | 7030003820 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R325 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R326 | 7030003820 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R327 | 7030003580 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R328 | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ) |
| R329 | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R330 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R331 | 7210002710 | VARIABLE TP98D00A-20F 10KB10KA-1847 |
| R332 | 7210002710 | VARIABLE TP98D00A-20F 10KB10KA-1847 |
| R333 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R334 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R335 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R336 | 7030003600 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R337 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R338 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R339 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R340 | 7030003600 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R341 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R342 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R343 | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R344 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R345 | 7030003200 | S.RESISTOR ERJ3GEYJ 100 V (10 Ω) |
| R346 | 7030003460 | S.RESISTOR ERJ3GEYJ 222 V (2.2 kΩ) |
| R347 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R348 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R349 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R350 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R351 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R352 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R353 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R354 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R355 | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ) |
| R356 | 7030003490 | S.RESISTOR ERJ3GEYJ 272 V (2.7 kΩ) |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|------------------------------------|
| R357 | 7030003560 | S.RESISTOR ERJ3GEYJ 103 V (10 kΩ) |
| R358 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R359 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R360 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R361 | 7030003660 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R362 | 7030003800 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R363 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R364 | 7030003420 | S.RESISTOR ERJ3GEYJ 661 V (660 Ω) |
| R365 | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) |
| R366 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R367 | 7030003790 | S.RESISTOR ERJ3GEYJ 624 V (620 kΩ) |
| R368 | 7030003770 | S.RESISTOR ERJ3GEYJ 564 V (560 kΩ) |
| R369 | 7030003790 | S.RESISTOR ERJ3GEYJ 624 V (620 kΩ) |
| R370 | 7030003750 | S.RESISTOR ERJ3GEYJ 394 V (390 kΩ) |
| R371 | 7030003730 | S.RESISTOR ERJ3GEYJ 274 V (270 kΩ) |
| R372 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R373 | 7030003670 | S.RESISTOR ERJ3GEYJ 623 V (62 kΩ) |
| R374 | 7030003670 | S.RESISTOR ERJ3GEYJ 623 V (62 kΩ) |
| R375 | 7030003670 | S.RESISTOR ERJ3GEYJ 623 V (62 kΩ) |
| R376 | 7030003540 | S.RESISTOR ERJ3GEYJ 564 V (560 kΩ) |
| R377 | 7030003640 | S.RESISTOR ERJ3GEYJ 225 V (2.2 MΩ) |
| R378 | 7030003640 | S.RESISTOR ERJ3GEYJ 225 V (2.2 MΩ) |
| R379 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R380 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R381 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R382 | 7310003770 | S.TRIMMER EVM-1XSX50 B34 (303) |
| R383 | 7030003620 | S.RESISTOR ERJ3GEYJ 333 V (33 kΩ) |
| R384 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R385 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R386 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R387 | 7030003720 | S.RESISTOR ERJ3GEYJ 224 V (220 kΩ) |
| R388 | 7030003550 | S.RESISTOR ERJ3GEYJ 822 V (8.2 kΩ) |
| R389 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R390 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R391 | 7030003800 | S.RESISTOR ERJ3GEYJ 105 V (1 MΩ) |
| R392 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R393 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R394 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R395 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R396 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R397 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R403 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R417 | 7520000110 | S.POSISTOR PTH9C22 BD 471Q-T |
| R418 | 7030003600 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R419 | 7030003530 | S.RESISTOR ERJ3GEYJ 582 V (5.8 kΩ) |
| R420 | 7030003330 | S.RESISTOR ERJ3GEYJ 121 V (120 Ω) |
| R422 | 7030003390 | S.RESISTOR ERJ3GEYJ 391 V (390 Ω) |
| R423 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R424 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R425 | 7030003440 | S.RESISTOR ERJ3GEYJ 102 V (1 kΩ) |
| R426 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R427 | 7030003320 | S.RESISTOR ERJ3GEYJ 101 V (100 Ω) |
| R428 | 7030003640 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R429 | 7030003400 | S.RESISTOR ERJ3GEYJ 471 V (470 Ω) |
| R431 | 7030000170 | S.RESISTOR MCR10EZHZ 18 Ω (180) |
| R432 | 7030003260 | S.RESISTOR ERJ3GEYJ 470 V (47 Ω) |
| R433 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R434 | 7030003420 | S.RESISTOR ERJ3GEYJ 661 V (660 Ω) |
| R438 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R437 | 7030003800 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R436 | 7030003800 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R439 | 7030003800 | S.RESISTOR ERJ3GEYJ 223 V (22 kΩ) |
| R440 | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R441 | 7030003830 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R442 | 7030003630 | S.RESISTOR ERJ3GEYJ 393 V (39 kΩ) |
| R443 | 7030000220 | S.RESISTOR MCR10EZHZ 47 Ω (470) |
| R444 | 7030003580 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R445 | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ) |
| R446 | 7030003680 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |
| R447 | 7030003840 | S.RESISTOR ERJ3GEYJ 473 V (47 kΩ) |
| R448 | 7030003690 | S.RESISTOR ERJ3GEYJ 124 V (120 kΩ) |
| R449 | 7030003520 | S.RESISTOR ERJ3GEYJ 472 V (4.7 kΩ) |
| R450 | 7030003560 | S.RESISTOR ERJ3GEYJ 153 V (15 kΩ) |
| R451 | 7030003610 | S.RESISTOR ERJ3GEYJ 273 V (27 kΩ) |
| R452 | 7030003860 | S.RESISTOR ERJ3GEYJ 104 V (100 kΩ) |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|-------------------------|
| R453 | 7030003640 | S.RESISTOR | ERJ3GEYJ 473 V (47 kΩ) |
| R454 | 7030003690 | S.RESISTOR | ERJ3GEYJ 124 V (120 kΩ) |
| R455 | 7030003540 | S.RESISTOR | ERJ3GEYJ 682 V (6.8 kΩ) |
| R456 | 7030003680 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R457 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R458 | 7030003880 | S.RESISTOR | ERJ3GEYJ 104 V (100 kΩ) |
| R459 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R480 | 7030003580 | S.RESISTOR | ERJ3GEYJ 153 V (15 kΩ) |
| R481 | 7030003820 | S.RESISTOR | ERJ3GEYJ 333 V (33 kΩ) |
| R482 | 7030003560 | S.RESISTOR | ERJ3GEYJ 103 V (10 kΩ) |
| R483 | 7030003490 | S.RESISTOR | ERJ3GEYJ 272 V (2.7 kΩ) |
| R484 | 7030003380 | S.RESISTOR | ERJ3GEYJ 331 V (330 Ω) |
| R485 | 7030003800 | S.RESISTOR | ERJ3GEYJ 105 V (1 MΩ) |
| R489 | 7030003460 | S.RESISTOR | ERJ3GEYJ 152 V (1.5 kΩ) |
| R470 | 7030003340 | S.RESISTOR | ERJ3GEYJ 151 V (150 Ω) |
| R471 | 7030003330 | S.RESISTOR | ERJ3GEYJ 121 V (120 Ω) |
| R472 | 7030000220 | S.RESISTOR | MCR10EZJH 47 Ω (470) |
| R474 | 7030003320 | S.RESISTOR | ERJ3GEYJ 101 V (100 Ω) |
| R475 | 7030003200 | S.RESISTOR | ERJ3GEYJ 100 V (10 Ω) |
| | | | |
| C1 | 4030011090 | S.CERAMIC | GRM42-6 CH 070D 500PT |
| C2 | 4030011080 | S.CERAMIC | GRM42-6 CH 040C 500PT |
| C3 | 4030011110 | S.CERAMIC | GRM42-6 CH 090D 500PT |
| C5 | 4030011100 | S.CERAMIC | GRM42-6 CH 080D 500PT |
| C6 | 4030011080 | S.CERAMIC | GRM42-6 CH 080D 500PT |
| C7 | 4030011250 | S.CERAMIC | GRM42-6 W5R 471K 500PT |
| C8 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C9 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C10 | 4030011250 | S.CERAMIC | GRM42-6 W5R 471K 500PT |
| C11 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C12 | 4030011020 | S.CERAMIC | GRM42-6 CK 010C 500PT |
| C13 | 4030011120 | S.CERAMIC | GRM42-6 CH 100D 500PT |
| C14 | 4030011070 | S.CERAMIC | GRM42-6 CH 050C 500PT |
| C18 | 4030011020 | S.CERAMIC | GRM42-6 CK 010C 500PT |
| C17 | 4030011120 | S.CERAMIC | GRM42-6 CH 100D 500PT |
| C18 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C19 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C20 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C22 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C23 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C24 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C25 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C26 | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR |
| C27 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C28 | 4550008880 | S.TANTALUM | ECST1CC228R |
| C29 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C30 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C31 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C32 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C38 | 4550008850 | S.TANTALUM | ECST1CY885R |
| C39 | 4030008890 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C40 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C41 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C42 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C43 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C44 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C45 | 4030007020 | S.CERAMIC | C1808 CH 1H 120J-T-A |
| C46 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C47 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C48 | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR |
| C49 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C50 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C51 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C52 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C53 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C54 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C55 | 4030008990 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C56 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C57 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C59 | 4030008980 | S.CERAMIC | C1808 CH 1H 070D-T-A |
| C60 | 4030008980 | S.CERAMIC | C1808 CH 1H 070D-T-A |
| C61 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C62 | 4510008220 | S.ELECTROLITIC | ECEV1CA101UP |
| C63 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C64 | 4510008210 | S.ELECTROLITIC | ECEV1VA330UP |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|-------------|-----------------------|
| C65 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C68 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C68 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C69 | 4030009510 | S.CERAMIC | C1808 CH 1H 010B-T-A |
| C70 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C71 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C72 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C73 | 4030009510 | S.CERAMIC | C1808 CH 1H 010B-T-A |
| C74 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C75 | 4030008950 | S.CERAMIC | C1808 CH 1H 040C-T-A |
| C76 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C77 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C78 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C79 | 4030007110 | S.CERAMIC | C1808 CH 1H 680J-T-A |
| C80 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C81 | 4550008130 | S.TANTALUM | ECST1VY224R |
| C82 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C83 | 4550008640 | S.TANTALUM | ECST1DY225R |
| C84 | 4550008640 | S.TANTALUM | ECST1DY225R |
| C88 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C87 | 4030008760 | S.CERAMIC | C2012 X7R 1C 104K-T-A |
| C88 | 4030008630 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C89 | 4030008630 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C90 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C91 | 4030008670 | S.CERAMIC | C1808 JB 1H 222K-T-A |
| C92 | 4550008640 | S.TANTALUM | ECST1DY225R |
| C93 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C94 | 4550008640 | S.TANTALUM | ECST1DY225R |
| C95 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C98 | 4030011090 | S.CERAMIC | GRM42-6 CH 070D 500PT |
| C97 | 4030007030 | S.CERAMIC | C1808 CH 1H 150J-T-A |
| C98 | 4030008980 | S.CERAMIC | C1808 CH 1H 070D-T-A |
| C99 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C100 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C101 | 4030008950 | S.CERAMIC | C1808 CH 1H 040C-T-A |
| C102 | 4030010780 | S.CERAMIC | C1808 CH 1H 1R5C-T-A |
| C103 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C104 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C105 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C106 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C107 | 4030007090 | S.CERAMIC | C1808 CH 1H 470J-T-A |
| C108 | 4030007030 | S.CERAMIC | C1808 CH 1H 150J-T-A |
| C109 | 4030008940 | S.CERAMIC | C1808 CH 1H 030C-T-A |
| C110 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C111 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C112 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C113 | 4030008990 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C114 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C115 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C116 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C118 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C119 | 4030008660 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C120 | 4030008660 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C121 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C122 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C123 | 4030011030 | S.CERAMIC | GRM42-6 CK 1R5C 500PT |
| C124 | 4030010780 | S.CERAMIC | C1808 CH 1H 1R5C-T-A |
| C125 | 4030010780 | S.CERAMIC | C1808 CH 1H 1R5C-T-A |
| C126 | 4030008940 | S.CERAMIC | C1808 CH 1H 030C-T-A |
| C127 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C128 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C129 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C130 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C131 | 4030008980 | S.CERAMIC | C1808 CH 1H 070D-T-A |
| C132 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C133 | 4030008960 | S.CERAMIC | C1808 CH 1H 050C-T-A |
| C134 | 4030008960 | S.CERAMIC | C1808 CH 1H 050C-T-A |
| C135 | 4030008930 | S.CERAMIC | C1808 CH 1H 020C-T-A |
| C136 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C137 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C138 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C139 | 4030008650 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C140 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C141 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C142 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C143 | 4030007040 | S.CERAMIC | C1808 CH 1H 180J-T-A |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|----------------------------------|
| C144 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C147 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C149 | 4610001260 | S.TRIMMER ECR-JA020 E12W |
| C150 | 4030007070 | S.CERAMIC C1808 CH 1H 330J-T-A |
| C151 | 4030007120 | S.CERAMIC C1808 CH 1H 620J-T-A |
| C152 | 4030007090 | S.CERAMIC C1808 CH 1H 470J-T-A |
| C154 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C155 | 4510004630 | S.ELECTROLITIC ECEV1CA100SR |
| C156 | 4030006630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C160 | 4030011190 | S.CERAMIC GRM42-6 CH 270J 500PT |
| C161 | 4030011200 | S.CERAMIC GRM42-6 CH 300J 500PT |
| C162 | 4030011170 | S.CERAMIC GRM42-6 CH 180J 500PT |
| C163 | 4030011260 | S.CERAMIC GRM42-6 W5R 102K 500PT |
| C164 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C165 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C166 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C167 | 4030011250 | S.CERAMIC GRM42-6 W5R 471K 500PT |
| C168 | 4030011020 | S.CERAMIC GRM42-6 CK 010C 500PT |
| C169 | 4030011120 | S.CERAMIC GRM42-6 CH 100D 500PT |
| C170 | 4030011200 | S.CERAMIC GRM42-6 CH 300J 500PT |
| C171 | 4030011290 | S.CERAMIC GRM42-6 CH 240J 500PT |
| C172 | 4030011020 | S.CERAMIC GRM42-6 CK 010C 500PT |
| C173 | 4030011120 | S.CERAMIC GRM42-6 CH 100D 500PT |
| C174 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C175 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C176 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C176 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C180 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C181 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C182 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C183 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C187 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C188 | 4550006880 | S.TANTALUM ECST1CC226R |
| C189 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C190 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C191 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C192 | 4030007050 | S.CERAMIC C1808 CH 1H 220J-T-A |
| C193 | 4510008220 | S.ELECTROLITIC ECEV1CA101UP |
| C194 | 4550006650 | S.TANTALUM ECST1CY865R |
| C195 | 4030008880 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C198 | 4030008880 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C198 | 4030008880 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C199 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C200 | 4030007080 | S.CERAMIC C1808 CH 1H 270J-T-A |
| C201 | 4030006940 | S.CERAMIC C1808 CH 1H 030C-T-A |
| C202 | 4030007050 | S.CERAMIC C1808 CH 1H 220J-T-A |
| C203 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C204 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C205 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C206 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C207 | 4030007050 | S.CERAMIC C1808 CH 1H 220J-T-A |
| C208 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C209 | 4030006970 | S.CERAMIC C1808 CH 1H 080D-T-A |
| C210 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C211 | 4030006970 | S.CERAMIC C1808 CH 1H 080D-T-A |
| C212 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C213 | 4510006210 | S.ELECTROLITIC ECEV1VA330UP |
| C214 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C215 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C216 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C217 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C218 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C219 | 4030008880 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C220 | 4030006900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C221 | 4550006360 | S.TANTALUM ECST1VY104R |
| C222 | 4550006640 | S.TANTALUM ECST1DY225R |
| C223 | 4550006640 | S.TANTALUM ECST1DY225R |
| C225 | 4030006660 | S.CERAMIC C2012 JF 1C 105Z-T-A |
| C226 | 4030008760 | S.CERAMIC C2012 X7R 1C 104K-T-A |
| C227 | 4030006900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C228 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C229 | 4030009510 | S.CERAMIC C1808 CH 1H 010B-T-A |
| C230 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C231 | 4030009510 | S.CERAMIC C1808 CH 1H 010B-T-A |
| C232 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C233 | 4030006660 | S.CERAMIC C1808 JB 1H 102K-T-A |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION |
|----------|------------|---------------------------------|
| C234 | 4030008900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C235 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C236 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C237 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C238 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C239 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C240 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C241 | 4030008900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C242 | 4550006640 | S.TANTALUM ECST1DY225R |
| C243 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C244 | 4030008670 | S.CERAMIC C1808 JB 1H 222K-T-A |
| C245 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C246 | 4030008660 | S.CERAMIC C2012 JF 1C 105Z-T-A |
| C247 | 4030008660 | S.CERAMIC C2012 JF 1C 105Z-T-A |
| C248 | 4510004630 | S.ELECTROLITIC ECEV1CA100SR |
| C249 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C250 | 4030011180 | S.CERAMIC GRM42-6 CH 150J 500PT |
| C251 | 4030007080 | S.CERAMIC C1808 CH 1H 270J-T-A |
| C252 | 4030008990 | S.CERAMIC C1808 CH 1H 080D-T-A |
| C253 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C254 | 4030008980 | S.CERAMIC C1808 CH 1H 070D-T-A |
| C255 | 4030008930 | S.CERAMIC C1808 CH 1H 020C-T-A |
| C256 | 4030007080 | S.CERAMIC C1808 CH 1H 270J-T-A |
| C256 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C259 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C260 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C263 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C264 | 4030006910 | S.CERAMIC C1808 CH 1H 0R5C-T-A |
| C285 | 4030008920 | S.CERAMIC C1808 CH 1H 010C-T-A |
| C286 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C286 | 4030008910 | S.CERAMIC C1808 CH 1H 0R5C-T-A |
| C289 | 4030008940 | S.CERAMIC C1808 CH 1H 030C-T-A |
| C271 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C272 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C274 | 4030007040 | S.CERAMIC C1808 CH 1H 180J-T-A |
| C275 | 4030008900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C278 | 4030009990 | S.CERAMIC C1808 CH 1H 200J-T-A |
| C277 | 4030008980 | S.CERAMIC C1808 CH 1H 050C-T-A |
| C278 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C279 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C281 | 4030008900 | S.CERAMIC C1808 JB 1E 103K-T-A |
| C282 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C284 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C285 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C288 | 4510004800 | ELECTROLITIC 16 MV 1000 HC |
| C267 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C288 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C289 | 4550006650 | S.TANTALUM ECST1CY865R |
| C290 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C291 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C292 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C293 | 4510008220 | S.ELECTROLITIC ECEV1CA101UP |
| C294 | 4030008830 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C295 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C296 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C297 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C298 | 4510006220 | S.ELECTROLITIC ECEV1CA101UP |
| C299 | 4510006220 | S.ELECTROLITIC ECEV1CA101UP |
| C300 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C301 | 4550006360 | S.TANTALUM ECST1VY104R |
| C302 | 4510006210 | S.ELECTROLITIC ECEV1VA330UP |
| C303 | 4510006210 | S.ELECTROLITIC ECEV1VA330UP |
| C304 | 4510008210 | S.ELECTROLITIC ECEV1VA330UP |
| C307 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C306 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C309 | 4030008630 | S.CERAMIC C1808 JF 1C 104Z-T-A |
| C310 | 4510004640 | S.ELECTROLITIC ECEV1CA470SP |
| C311 | 4030007010 | S.CERAMIC C1808 CH 1H 100D-T-A |
| C312 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C313 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C314 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C315 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C316 | 4030008650 | S.CERAMIC C1808 JB 1H 471K-T-A |
| C317 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C318 | 4030008660 | S.CERAMIC C1808 JB 1H 102K-T-A |
| C319 | 4030008990 | S.CERAMIC C1808 CH 1H 080D-T-A |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|-----------------------|
| C320 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C326 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C327 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C326 | 4030008850 | S.CERAMIC | C1808 JB 1H 471K-T-A |
| C329 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C331 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C332 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C333 | 4030007120 | S.CERAMIC | C1808 CH 1H 820J-T-A |
| C334 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C335 | 4030007100 | S.CERAMIC | C1808 CH 1H 580J-T-A |
| C338 | 4030007040 | S.CERAMIC | C1808 CH 1H 180J-T-A |
| C337 | 4030006900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C336 | 4030007180 | S.CERAMIC | C1808 CH 1H 161J-T-A |
| C339 | 4030006900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C340 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C341 | 4030006900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C342 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C343 | 4030008880 | S.CERAMIC | C1808 JB 1H 472K-T-A |
| C345 | 4030006880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C348 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C347 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C348 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C349 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C350 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C351 | 4030007070 | S.CERAMIC | C1808 CH 1H 330J-T-A |
| C352 | 4030006900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C353 | 4030008780 | S.CERAMIC | C2012 X7R 1C 104K-T-A |
| C354 | 4030008780 | S.CERAMIC | C2012 X7R 1C 104K-T-A |
| C355 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C358 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C357 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C356 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C359 | 4030008880 | S.CERAMIC | C1808 JB 1C 153K-T-A |
| C380 | 4030008900 | S.CERAMIC | C1808 JB 1C 333K-T-A |
| C381 | 4030008880 | S.CERAMIC | C1808 JB 1C 153K-T-A |
| C382 | 4030008770 | S.CERAMIC | C1808 JB 1H 582K-T-A |
| C383 | 4030008770 | S.CERAMIC | C1808 JB 1H 582K-T-A |
| C384 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C385 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C388 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C387 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C388 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C371 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C372 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C373 | 4030007120 | S.CERAMIC | C1808 CH 1H 820J-T-A |
| C374 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C375 | 4030007090 | S.CERAMIC | C1808 CH 1H 470J-T-A |
| C376 | 4030007140 | S.CERAMIC | C1808 CH 1H 121J-T-A |
| C377 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C378 | 4030007180 | S.CERAMIC | C1808 CH 1H 161J-T-A |
| C379 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C380 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C381 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C382 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C383 | 4030008860 | S.CERAMIC | C1808 JB 1H 472K-T-A |
| C385 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C386 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C387 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C388 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C369 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C390 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C391 | 4030007070 | S.CERAMIC | C1808 CH 1H 330J-T-A |
| C392 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C393 | 4030008780 | S.CERAMIC | C2012 X7R 1C 104K-T-A |
| C394 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C395 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C398 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C397 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C398 | 4030008900 | S.CERAMIC | C1808 JB 1E 103K-T-A |
| C399 | 4030008860 | S.CERAMIC | C1808 JB 1C 153K-T-A |
| C400 | 4030006900 | S.CERAMIC | C1808 JB 1C 333K-T-A |
| C401 | 4030008860 | S.CERAMIC | C1808 JB 1C 153K-T-A |
| C402 | 4030008770 | S.CERAMIC | C1808 JB 1H 582K-T-A |
| C403 | 4030008770 | S.CERAMIC | C1808 JB 1H 582K-T-A |
| C404 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C405 | 4510004840 | S.ELECTROLITIC | ECEV1CA470SP |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|----------|------------|----------------|----------------------|
| C408 | 4510008240 | S.ELECTROLITIC | ECEV1CA221P |
| C407 | 4510004840 | S.ELECTROLITIC | ECEV1CA470SP |
| C408 | 4510008220 | S.ELECTROLITIC | ECEV1CA101UP |
| C409 | 4510008280 | S.ELECTROLITIC | ECEV1AA471UP |
| C410 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C411 | 4510008240 | S.ELECTROLITIC | ECEV1CA221P |
| C412 | 4510008220 | S.ELECTROLITIC | ECEV1CA101UP |
| C413 | 4510008260 | S.ELECTROLITIC | ECEV1AA471UP |
| C414 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C415 | 4510005870 | S.ELECTROLITIC | ECEV1HA3R3SR |
| C418 | 4550008140 | S.TANTALUM | ECST1EY474R |
| C417 | 4550008140 | S.TANTALUM | ECST1EY474R |
| C418 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C419 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C420 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C421 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C422 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C423 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C424 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C425 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C428 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C427 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C428 | 4510004840 | S.ELECTROLITIC | ECEV1CA470SP |
| C429 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C430 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C431 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C432 | 4510004830 | S.ELECTROLITIC | ECEV1CA100SR |
| C433 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C434 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C435 | 4030008900 | S.CERAMIC | C1808 JB 1C 333K-T-A |
| C438 | 4030007020 | S.CERAMIC | C1808 CH 1H 120J-T-A |
| C437 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C438 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C439 | 4510004840 | S.ELECTROLITIC | ECEV1CA470SP |
| C440 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C441 | 4030007130 | S.CERAMIC | C1808 CH 1H 101J-T-A |
| C442 | 4030008850 | S.CERAMIC | C1808 JB 1H 332K-T-A |
| C443 | 4030007120 | S.CERAMIC | C1808 CH 1H 820J-T-A |
| C444 | 4030009490 | S.CERAMIC | C1808 JB 1H 821K-T-A |
| C445 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C448 | 4030008880 | S.CERAMIC | C1808 JB 1C 223K-T-A |
| C447 | 4030008920 | S.CERAMIC | C1808 JB 1C 473K-T-A |
| C448 | 4030008920 | S.CERAMIC | C1808 JB 1C 473K-T-A |
| C449 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C450 | 4030008870 | S.CERAMIC | C1808 JB 1H 222K-T-A |
| C451 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C452 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C453 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C454 | 4510005870 | S.ELECTROLITIC | ECEV1HA3R3SR |
| C455 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C458 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C457 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C458 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C459 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C480 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C481 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C482 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C483 | 4030008830 | S.CERAMIC | C1808 JF 1C 104Z-T-A |
| C484 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C485 | 4030007090 | S.CERAMIC | C1808 CH 1H 470J-T-A |
| C488 | 4030008910 | S.CERAMIC | C1808 CH 1H 0R5C-T-A |
| C469 | 4030008980 | S.CERAMIC | C1808 CH 1H 070D-T-A |
| C470 | 4030008940 | S.CERAMIC | C1808 CH 1H 030C-T-A |
| C471 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C476 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C480 | 4030008990 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C481 | 4030008970 | S.CERAMIC | C1808 CH 1H 060D-T-A |
| C482 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C483 | 4030007010 | S.CERAMIC | C1808 CH 1H 100D-T-A |
| C484 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C485 | 4030008860 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C488 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C490 | 4550008880 | S.TANTALUM | ECST1CC228R |
| C491 | 4510008220 | S.ELECTROLITIC | ECEV1CA101UP |
| C492 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C493 | 4030008860 | S.CERAMIC | C2012 JF 1C 105Z-T-A |

S.=Surface mount

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | |
|-------------|--------------|-------------|----------------------|
| C494 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C495 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C498 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C497 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C498 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C499 | 4030008910 | S.CERAMIC | C1808 CH 1H 0R5C-T-A |
| C500 | 4030008970 | S.CERAMIC | C1808 CH 1H 080D-T-A |
| C501 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C503 | 4030008880 | S.CERAMIC | C2012 JF 1C 105Z-T-A |
| C504 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C505 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C508 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C507 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C508 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C509 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C510 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C511 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C512 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C513 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C514 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C515 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C518 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C517 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C518 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C519 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C520 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C521 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C522 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C523 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C524 | 4030007140 | S.CERAMIC | C1808 CH 1H 121J-T-A |
| C525 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C528 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C527 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C528 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C529 | 4030008880 | S.CERAMIC | C1808 JB 1H 102K-T-A |
| C530 | 4030008940 | S.CERAMIC | C1808 CH 1H 030C-T-A |
| C531 | 4030007090 | S.CERAMIC | C1808 CH 1H 470J-T-A |
| J2 | 8450000140 | CONNECTOR | HSJ0807-01-010 |
| J3 | 8450000140 | CONNECTOR | HSJ0807-01-010 |
| J4 | 8510014790 | CONNECTOR | 53253-0210 |
| J5 | 8510007060 | CONNECTOR | PI28A-02M |
| J6 | 8510018440 | S.CONNECTOR | 52485-1491 |
| J7 | 8510018280 | S.CONNECTOR | 5-175839-0 |
| J8 | 8510018280 | S.CONNECTOR | 5-175839-0 |
| J9 | 8450001550 | CONNECTOR | MJ68HOP |
| W1 | 8900004880 | CABLE | OPC-485 |
| W2 | 7120000380 | JUMPER | JPW 01 R-01 |
| W3 | 7120000380 | JUMPER | JPW 01 R-01 |
| W4 | 7120000380 | JUMPER | JPW 01 R-01 |
| W5 | 7030003880 | S.JUMPER | ERJ3GE JPW V |
| W6 | 7030003880 | S.JUMPER | ERJ3GE JPW V |
| W7 | 7030003880 | S.JUMPER | ERJ3GE JPW V |
| W8 | 7030003880 | S.JUMPER | ERJ3GE JPW V |
| W9 | 7030003970 | S.JUMPER | MCR18EZHZ JPW (000) |
| W10 | 7030007150 | S.JUMPER | MCR50JZHZ JPW (000) |
| W11 | 7030007150 | S.JUMPER | MCR50JZHZ JPW (000) |
| EP1 | 0910044525 | PCB | B 4473E |
| EP4 | 8910000830 | BEAD | FSOH070RN |
| EP5 | 8910000830 | BEAD | FSOH070RN |

S.=Surface mount

SECTION 7 MECHANICAL PARTS AND DISASSEMBLY

7-1 CABINET PARTS

[CHASSIS PARTS]

| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------|------------------------------|------|
| J 1 | 6510004880 | Antenna connector MR-DS-E 01 | 1 |
| MF 1 | 2710000410 | Fan motor 0410-12H | 1 |
| MP 1 | 8010015970 | 1647 Chassis | 1 |
| MP 2 | 8930035360 | 1647 SP plate | 1 |
| MP 3 | 8930035340 | 1647 TR clip | 1 |
| MP 4 | 8810008660 | Screw PH BT M3 x 8 NI-ZU | 2 |
| MP 5 | 8810004430 | Screw PH M3 x 6 ZK | 4 |
| MP 6 | 8810008630 | Screw PH BT M3 x 6 NI-ZU | 6 |
| MP 7 | 8810004430 | Screw PH M3 x 6 ZK | 1 |
| MP 8 | 8110005550 | 1647 Fan cover | 1 |
| MP 9 | 8810004310 | Screw PH M2.6 x 10 ZK | 4 |
| MP10 | 8810009020 | Screw FH M2.6 x 5 ZK | 3 |
| MP11 | 8830000790 | VR nut (H) | 2 |
| MP12 | 8830001010 | HEX. nut(A) | 2 |
| MP13 | 8930038380 | 1647 Spring | 1 |

[MAIN UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------|----------------------------|------|
| W 1 | 8900004880 | Cable OPC-465 | 1 |
| MP 1 | 8930021620 | Coil cover FX859 | 1 |
| MP 2 | 8930035850 | 1647 Plate | 1 |
| MP 3 | 8510009720 | 1647 VCO case | 2 |
| MP 9 | 8510010010 | 1647 Filter plate | 1 |
| MP10 | 8930037120 | 1647 M-holder | 2 |
| MP11 | 8930037140 | 1647 M-sheet | 2 |
| MP12 | 8930037720 | Himeron sheet AX | 1 |
| MP14 | 8930014210 | Grounding spring(E) [USA] | 1 |
| MP15 | 8930014210 | Grounding spring (E) [USA] | 1 |
| MP16 | 8930038170 | 1647 spacer | 1 |
| MP18 | 8930038160 | Rubber sheet (S) | 1 |

[COVER UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------|--------------------|------|
| MP 1 | 8110005480 | 1647 COVER | 1 |
| MP 5 | 8930028820 | Himeron sheet (AJ) | 1 |
| SP 1 | 2510000820 | Speaker VS-57-0814 | 1 |
| WS 1 | 8600034120 | FX1647 P01CO | 1 |

[LOGIC UNIT]

| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------|----------------------------------|------|
| EP 2 | 8930037490 | LCD contact base SRCN-1647-ZNN-L | 1 |
| EP 3 | 8930037500 | LCD contact base SRCN-1647-ZNN-S | 1 |
| MP 1 | 8210012170 | 1647 LCD reflector | 1 |
| MP 2 | 8930036170 | 1647 LCD holder | 1 |
| MP 3 | 8930035400 | 1647 LCD filter | 1 |
| MP 4 | 8930017650 | Lamp spacer FX833 | 1 |
| MP 6 | 8930037130 | 1647 Mask sheet | 1 |
| MP 7 | 8510010161 | 1647 Switch cover-1 | 1 |

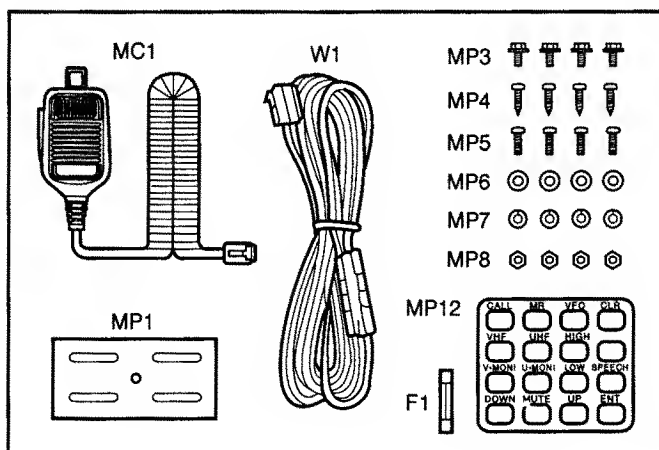
[FRONT UNIT]

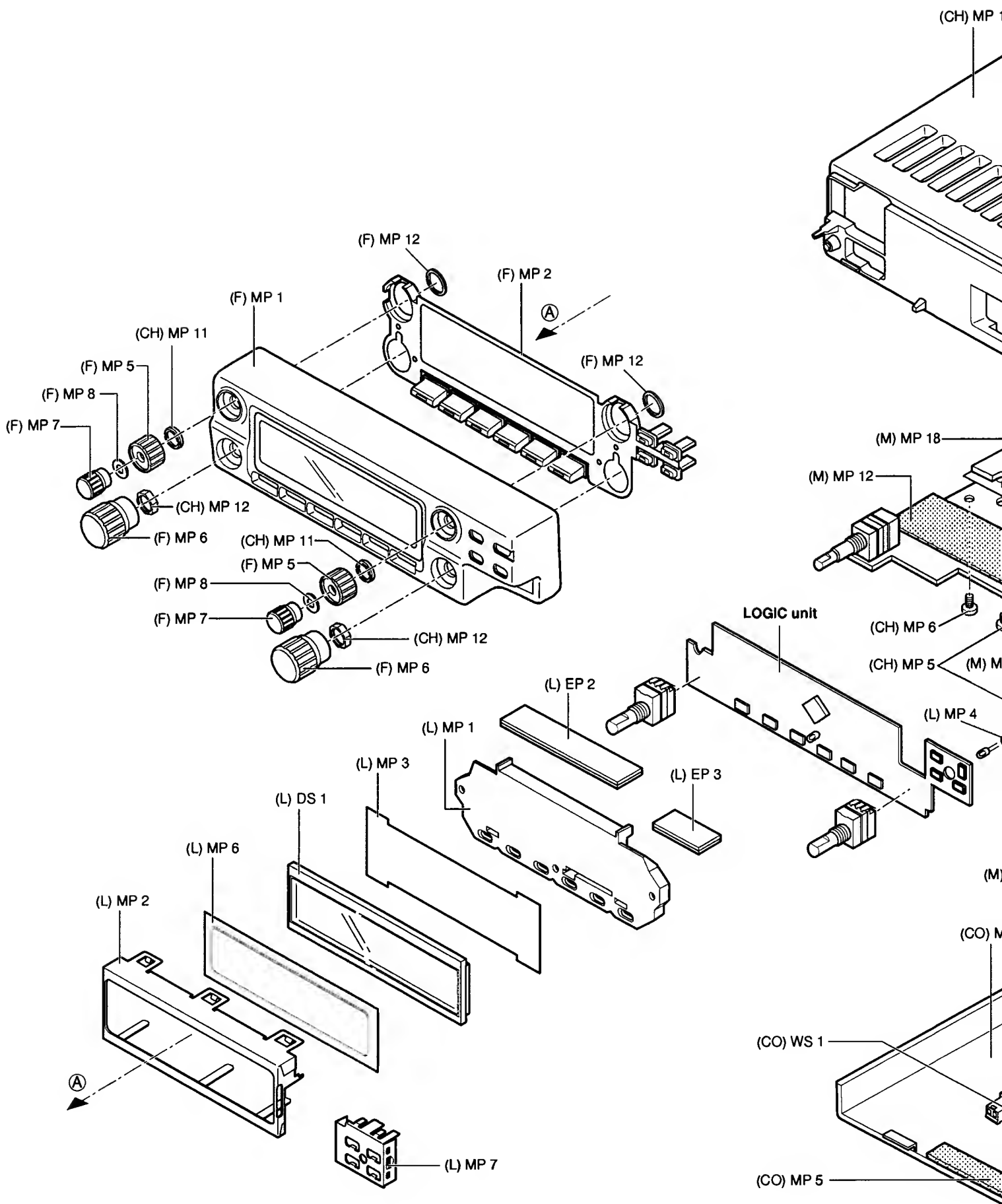
| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------|----------------------------|------|
| MP 1 | 8210013110 | 1647 Front panel | 1 |
| MP 2 | 8930035500 | 1647 Front key | 2 |
| MP 5 | 8610009860 | Knob N236 | 2 |
| MP 8 | 8610009840 | Knob N234 | 2 |
| MP 7 | 8610009850 | Knob N235 | 2 |
| MP 8 | 8930037800 | Knob sheet (A) | 2 |
| MP11 | 8950004430 | Double-sided tape (O) 4088 | 2 |
| MP12 | 8850001590 | Isolating flat washer (R) | 2 |

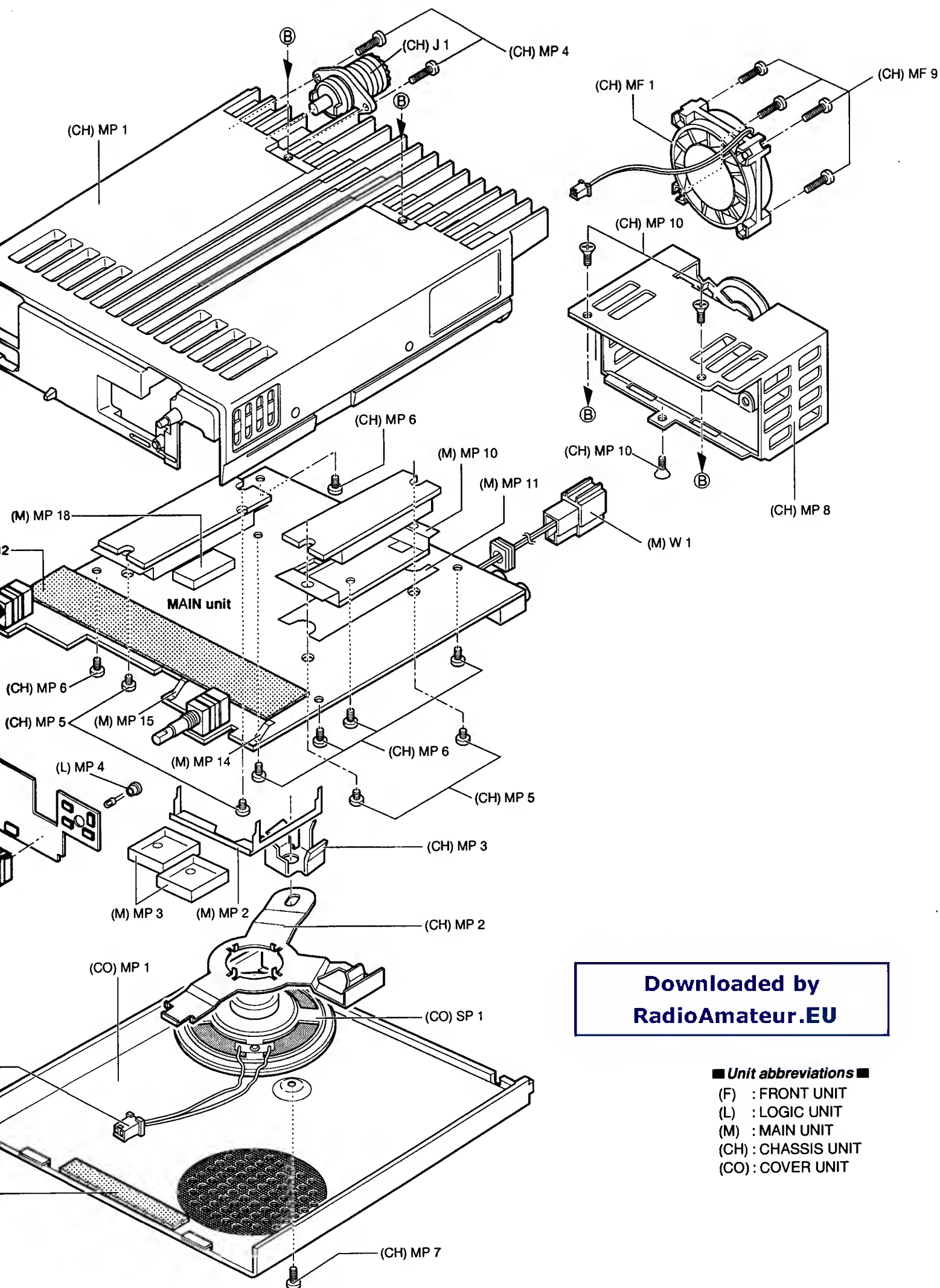
Screw abbreviations: PH: Pan head FH: Flat head B0: Self-tapping NI: Nickel ZK: Black

7-2 ACCESSORIES

| REF. NO. | ORDER NO. | DESCRIPTION | QTY. |
|----------|------------------|------------------------------------|------|
| F 1 | 5210000080 | Fuse FGB 20A | 1 |
| W 1 | Optional product | DC cable OPC-348 | 1 |
| MC 1 | Optional product | Microphone HM-95 ACC [USA], [KOR] | 1 |
| | Optional product | Microphone HM-98 ACC [AUS], [SEA] | 1 |
| | Optional product | Microphone HM-97 ACC [EUR], [ITA] | 1 |
| MP 1 | Optional product | 1542 Mobil bracket (B) | 1 |
| MP 3 | 8820000530 | Frang bolt M4 x 8 NI | 4 |
| MP 4 | 8810000470 | Screw PH M5 x 2 (+, -) | 4 |
| MP 5 | 8810000950 | Screw PH A M5 x16 | 4 |
| MP 6 | 8850000150 | Flat washer M5 NI BS | 4 |
| MP 7 | 8850000390 | Spring washer M5 | 4 |
| MP 8 | 8830000120 | Nut M5 | 4 |
| MP12 | 8310036010 | 1647 Microphone plate [USA], [KOR] | 1 |







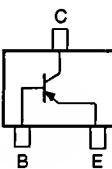
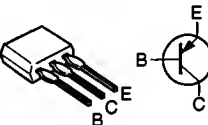
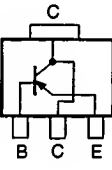
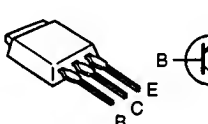
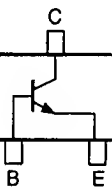
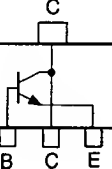
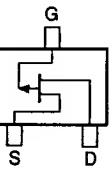
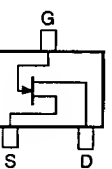
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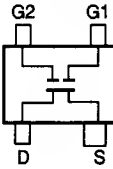
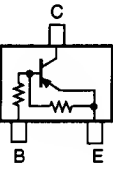
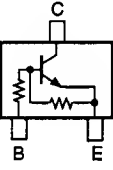
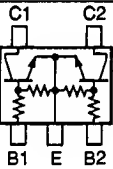
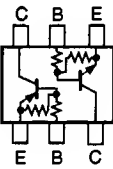
■ Unit abbreviations ■

(F) : FRONT UNIT
(L) : LOGIC UNIT
(M) : MAIN UNIT
(CH) : CHASSIS UNIT
(CO) : COVER UNIT

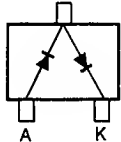
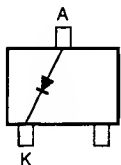
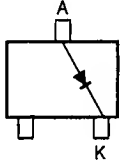
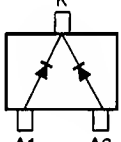
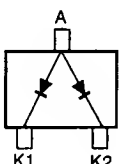
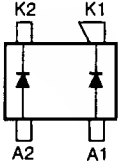
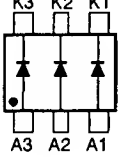
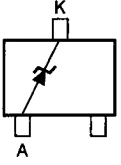
SECTION 8 SEMI-CONDUCTOR INFORMATION





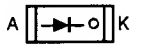
8-1 TRANSISTORS

| NAME | SYMBOL | INSIDE VIEW |
|---|---|---|
| 2SA1362 GR 2SA1576 R | AEG FR |  |
| 2SA1824 S | A1824 |  |
| 2SB798 | DK |  |
| 2SB1182 F5 Q | B1182 |  |
| 2SC2712 BL 2SC3324 GR 2SC3661 TA 2SC3770-3 TA 2SC4081 R 2SC4213 B 2SC4226 2SC4228 R45 2SC4403-3 | LL CBG FY JY3 BR AB R25 R45 LY3 |  |
| 2SC2954 2SC3357 2SD999 CK | QK RK CK |  |
| 2SJ144 GR | VG |  |
| 2SK880 Y 2SK1577-2 2SK1740 | XY P2 IJ |  |

| NAME | SYMBOL | INSIDE VIEW |
|---|-----------------------|---|
| 3SK166-2 3SK184 S | K 3R |  |
| DTA144VU DTB123EK | 156 F12 |  |
| DTC143 ZU DTC114EU DTC143XU DTC144EU | 123 24 43 26 |  |
| UMG9N | G9 |  |
| UMH2 | H2 |  |

8-2 DIODES

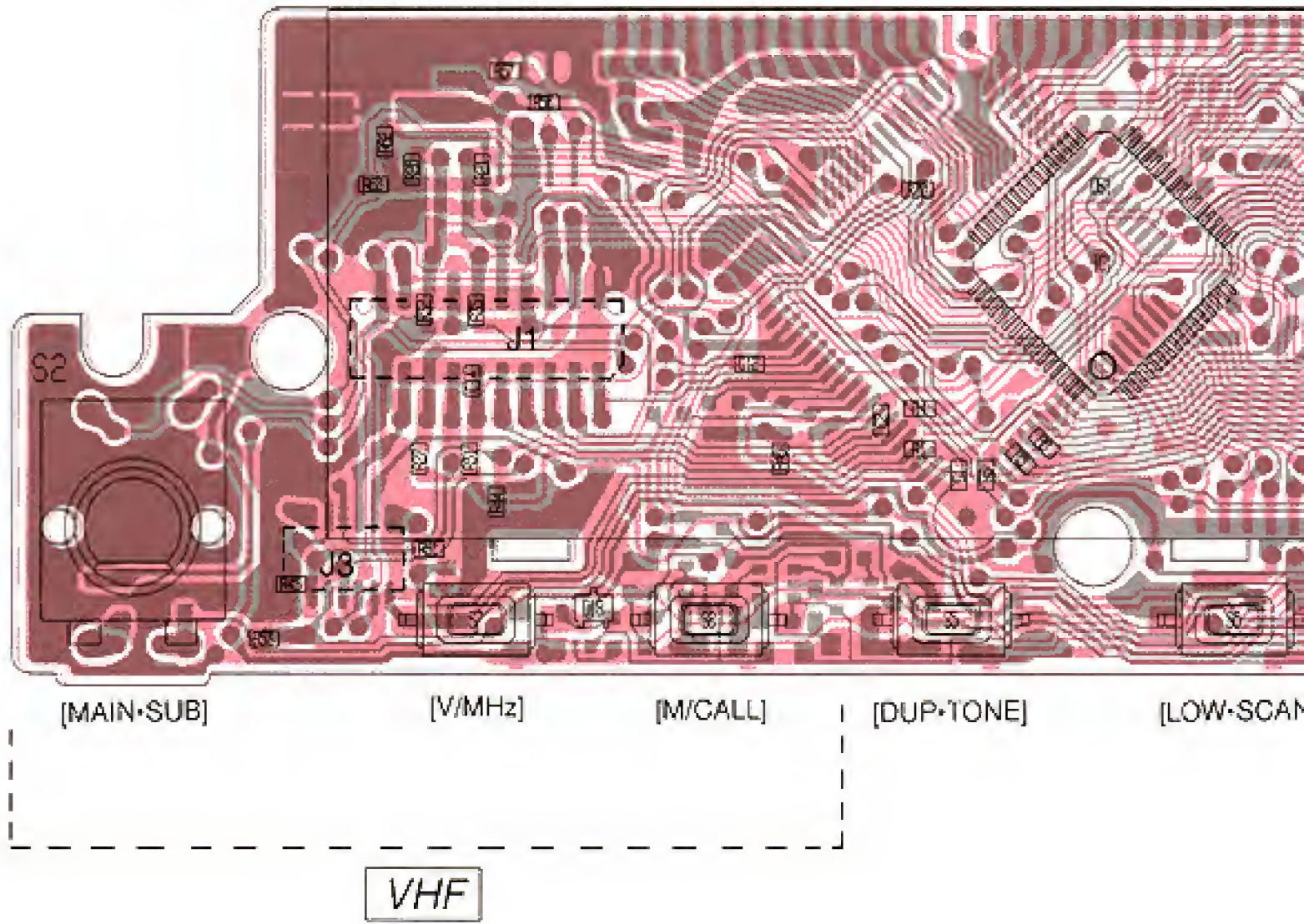
| NAME | SYMBOL | INSIDE VIEW |
|------------------------------------|-------------------|---|
| 1SS226 MA742 | C3 M1U |  |
| DA112 | AZ |  |
| DA113 | AY |  |
| DAN202 U | N |  |
| DAP202U | P |  |
| MA862 | M1I |  |
| MA6S121 | M2D |  |
| RD24M B2 RD3.3M B2 RD6.8M B2 | 242 332 682 |  |

| NAME | SYMBOL | INSIDE VIEW |
|-------------------------|---------------|---|
| 1SV166 1SV167 | Yellow — |  |
| MA8043L MA8062L | 4_3 6_2 |  |
| 1SS353 MA110 MA77 | C 1A 4B |  |
| 1SS254 | Yellow |  |
| MI809 | Red dot |  |

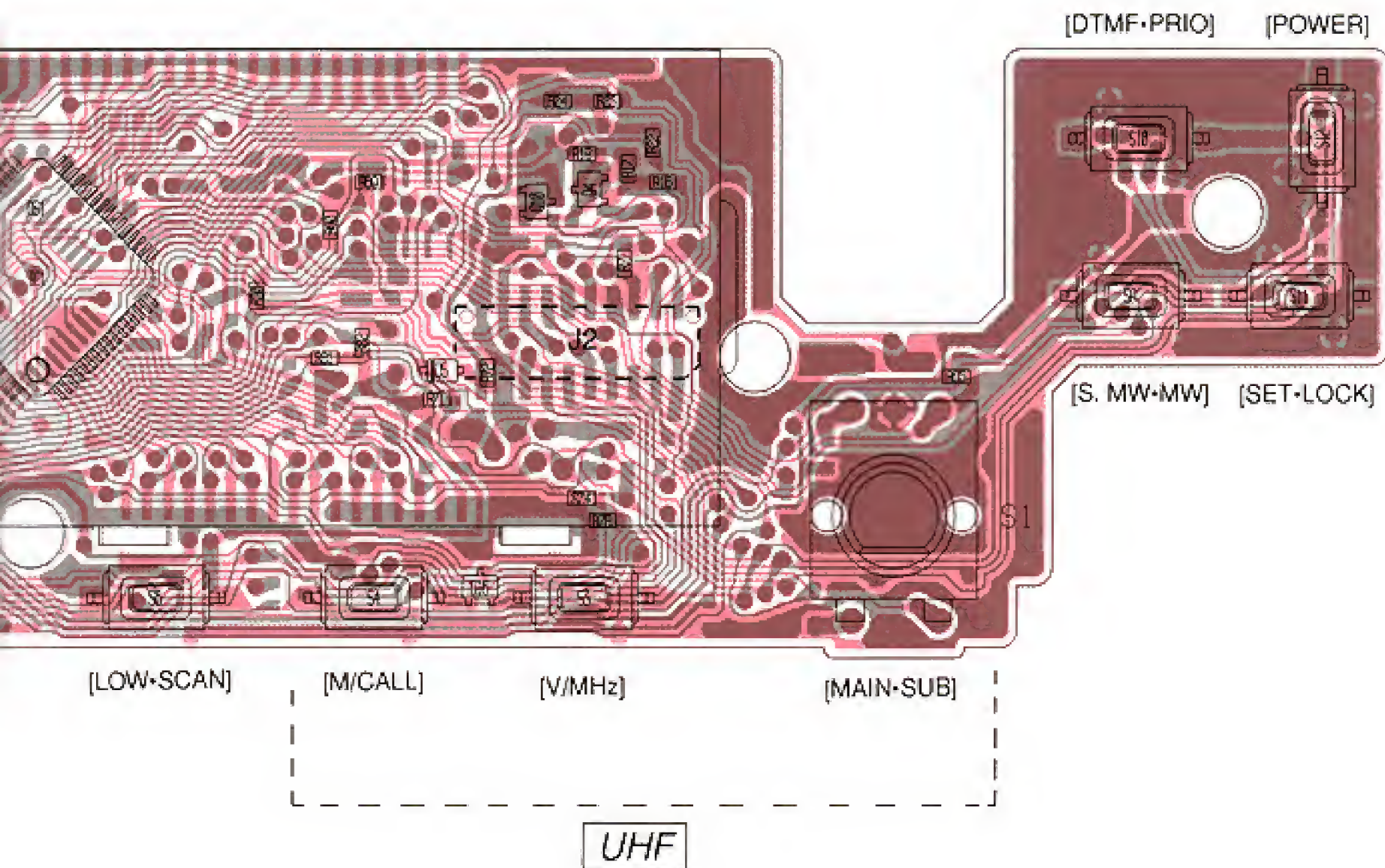
SECTION 9 BOARD LAYOUTS

9-1 LOGIC UNIT

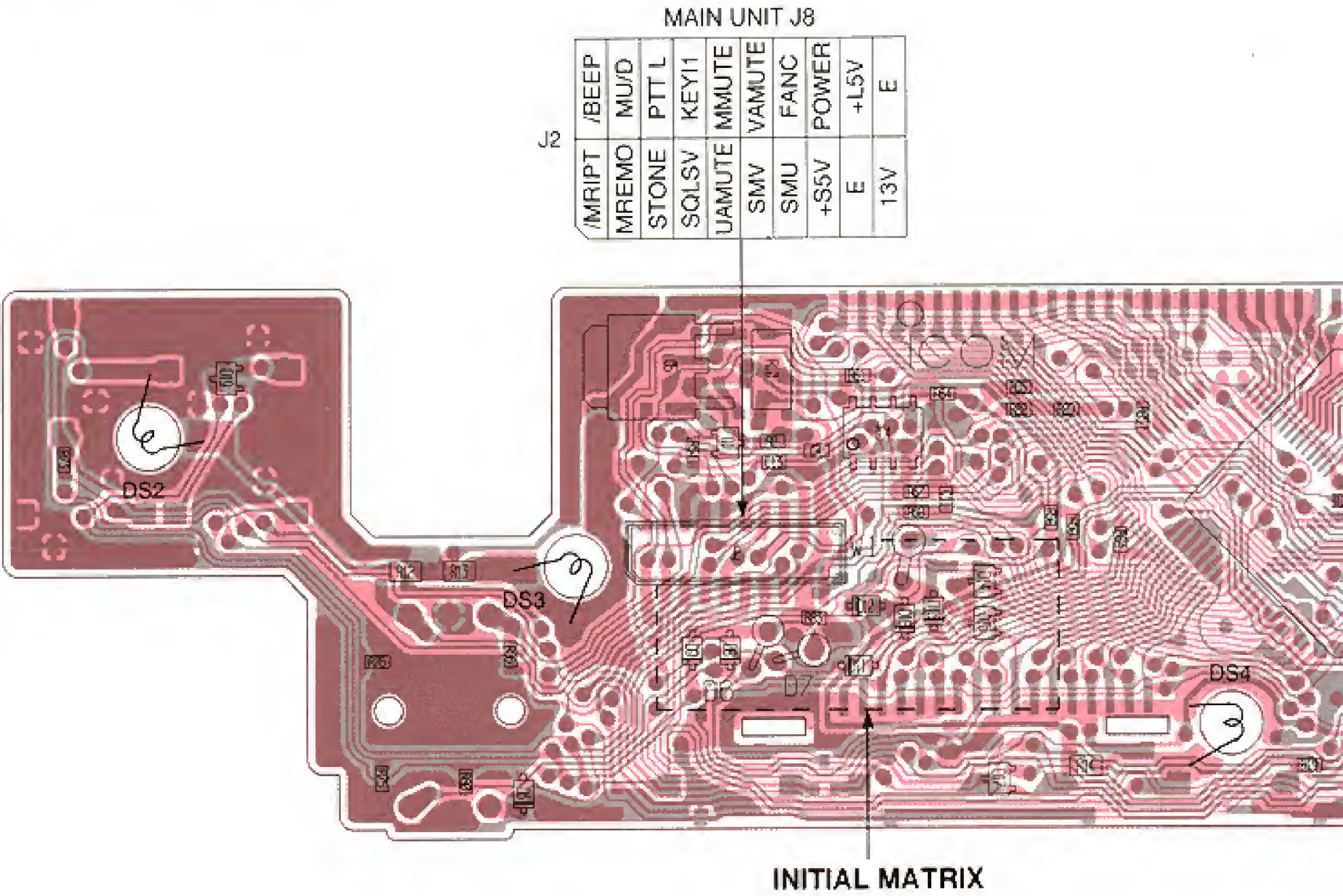
• LOGIC UNIT (TOP VIEW)



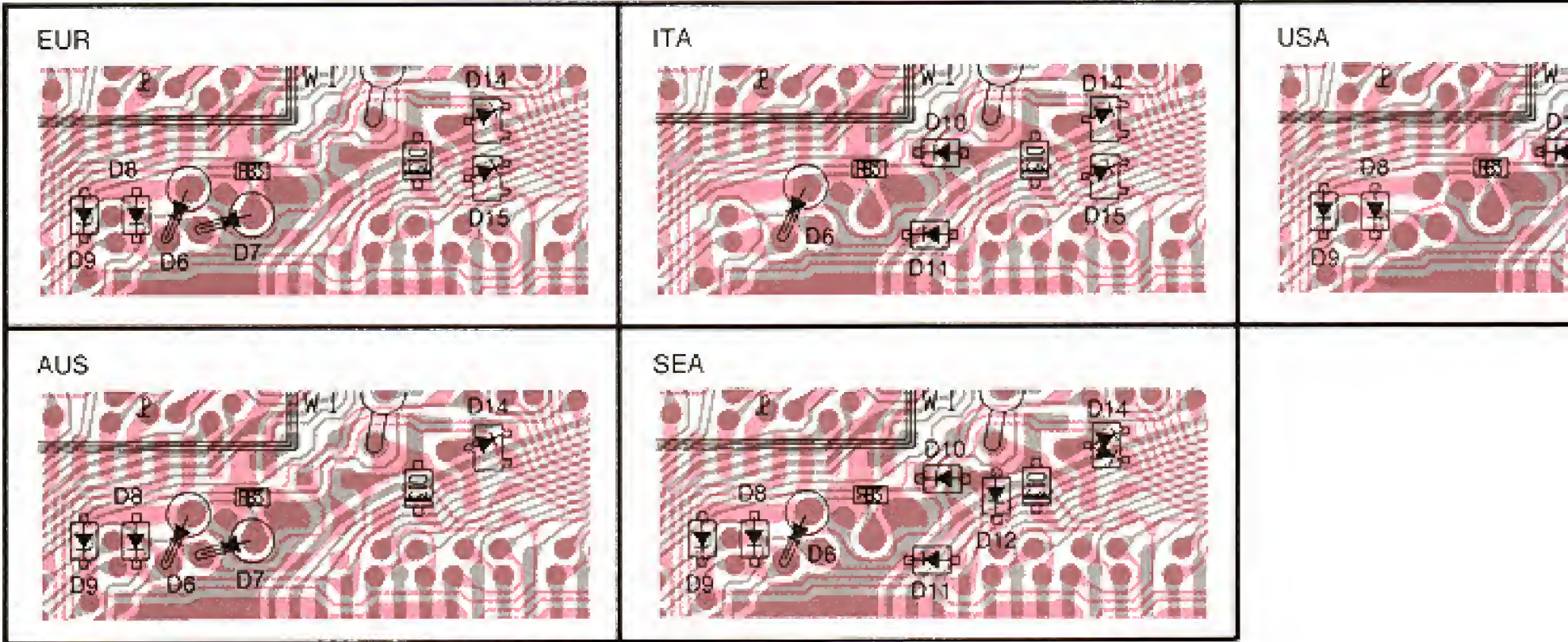
The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.

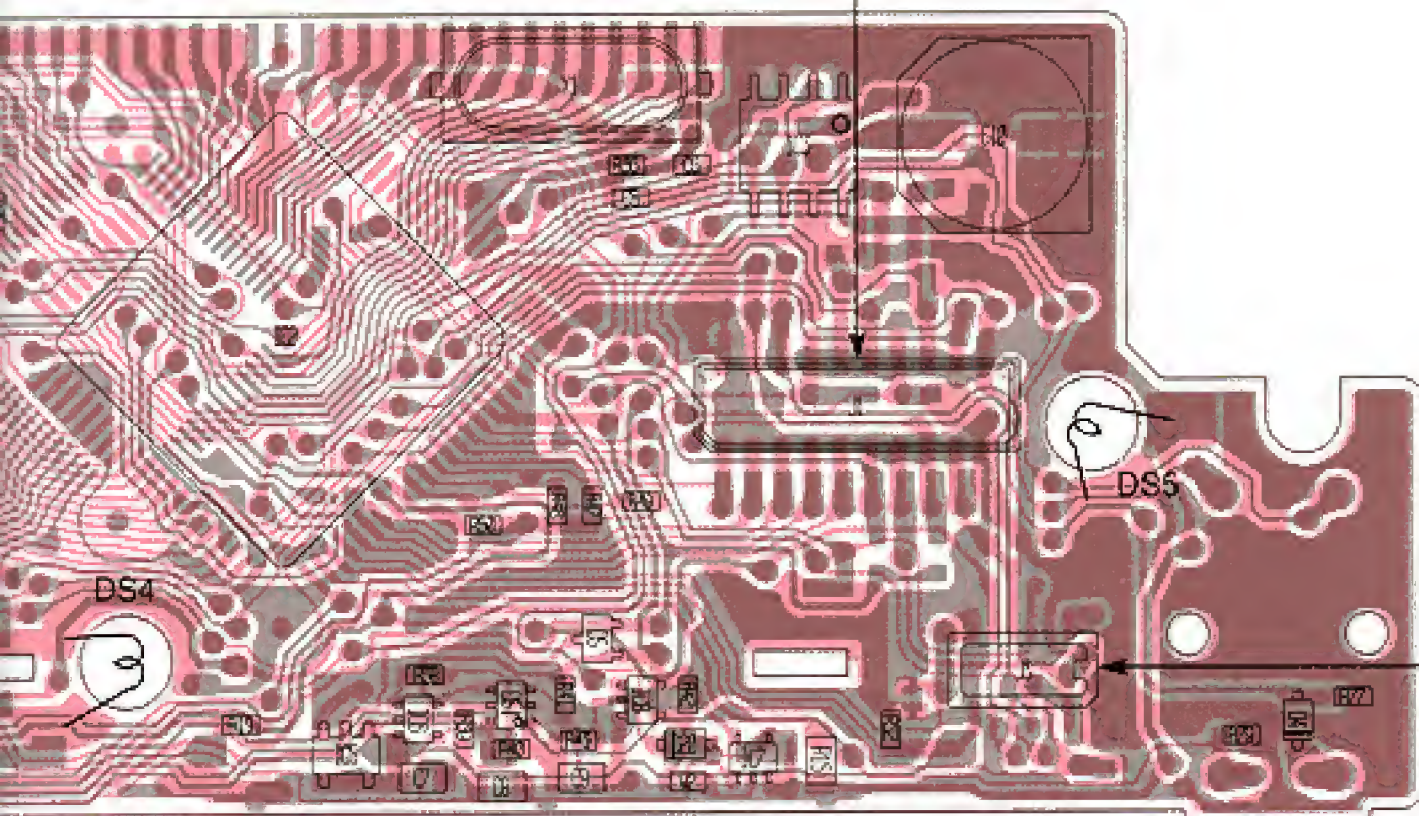


• LOGIC UNIT (BOTTOM VIEW)



• INITIAL MATRIX





MAIN UNIT J7

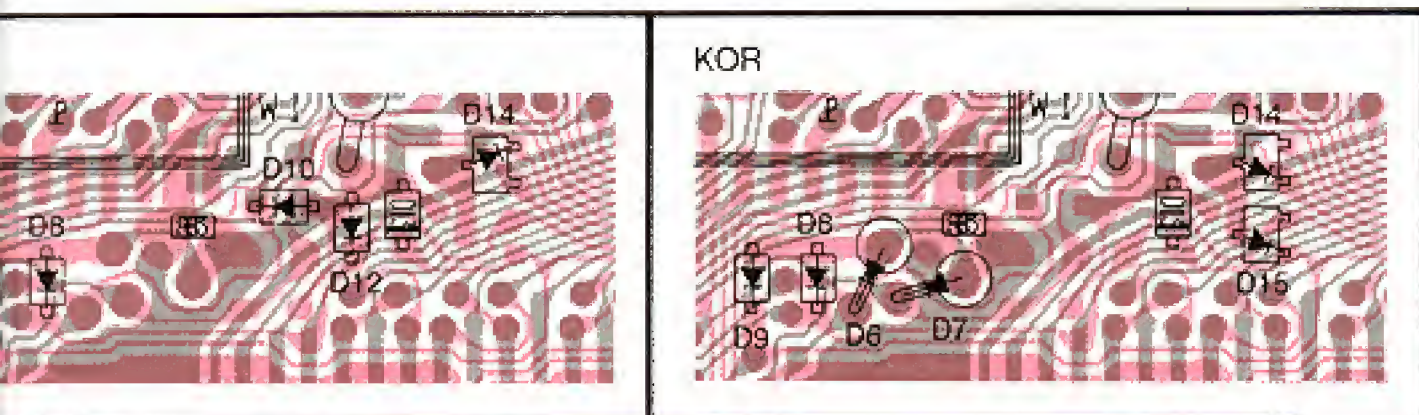
S1

| | |
|-------|-------|
| STD | E |
| Q4 | DATA |
| Q3 | CK |
| Q2 | STBOD |
| Q1 | OPTD |
| UNLKV | STB1 |
| DETV | STBP |
| UNLKV | SQLSU |
| DETV | KEYI3 |
| E | KEYS0 |

| | |
|-------|-------|
| TSQLU | UNIT |
| DATA | +S5V |
| CK | DETV |
| STBTU | STBTU |
| TSQLV | E |
| DETV | TSQLV |

OPTION UT-89

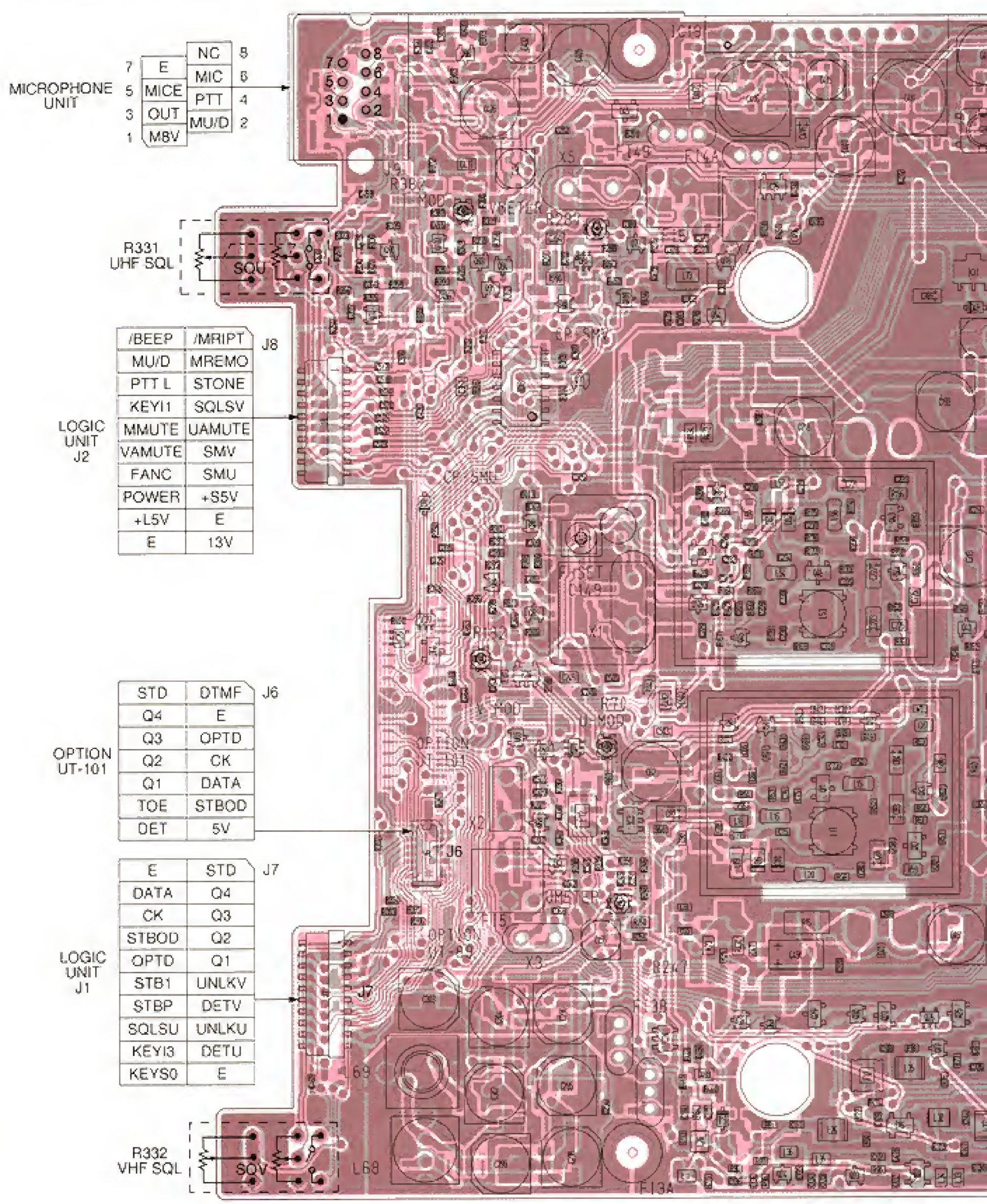
J3



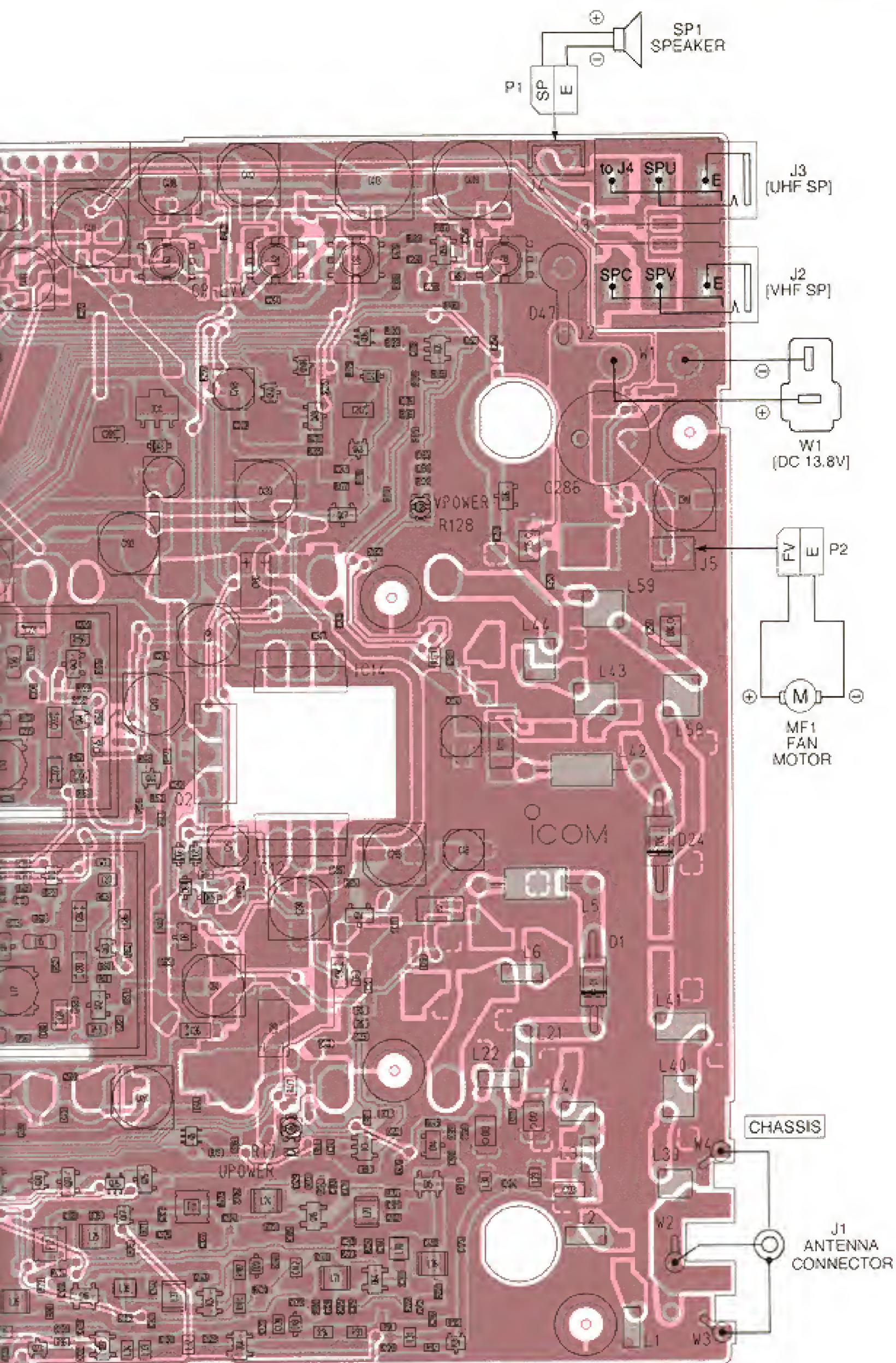
KOR

9-2 MAIN UNIT

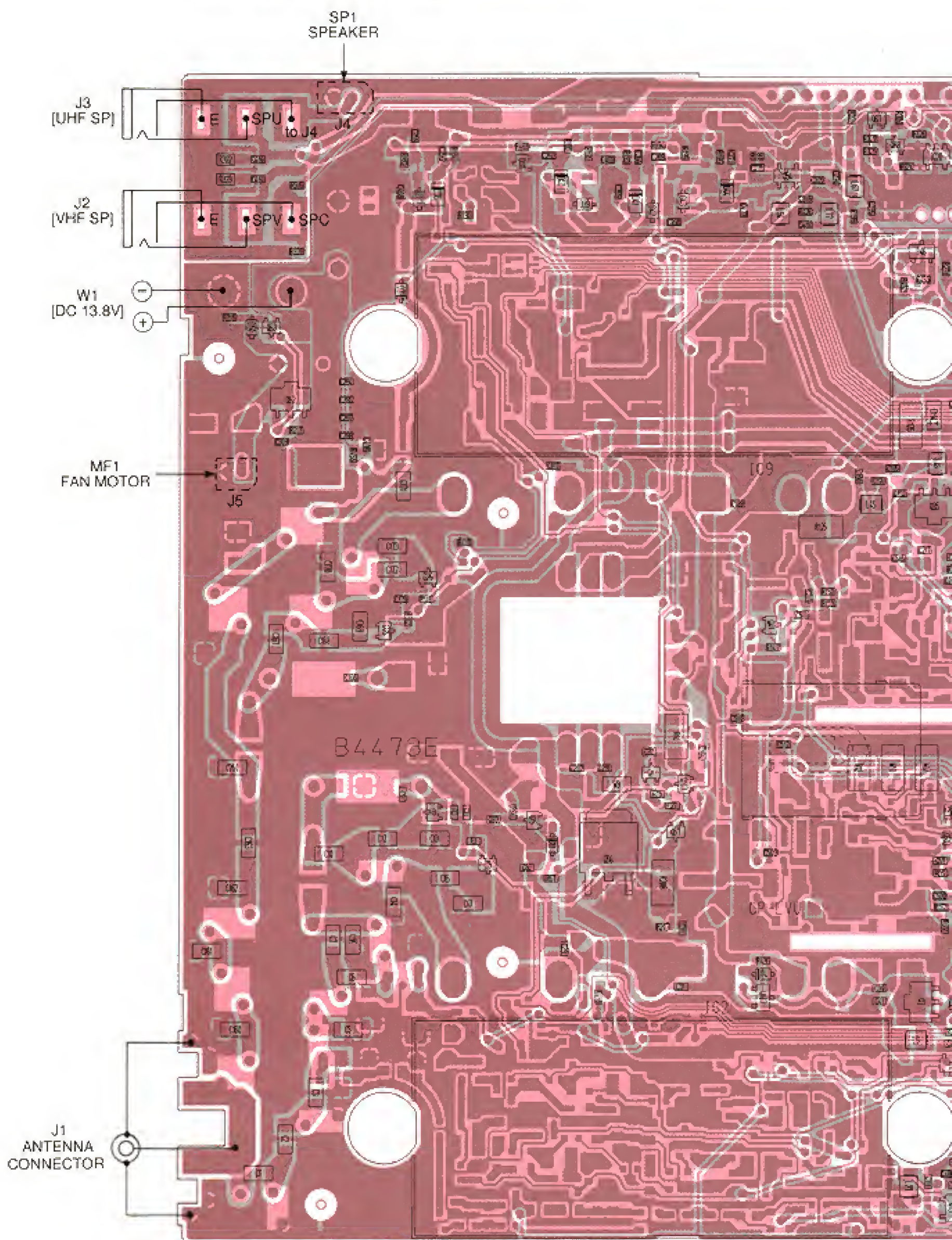
• MAIN UNIT (TOP VIEW)

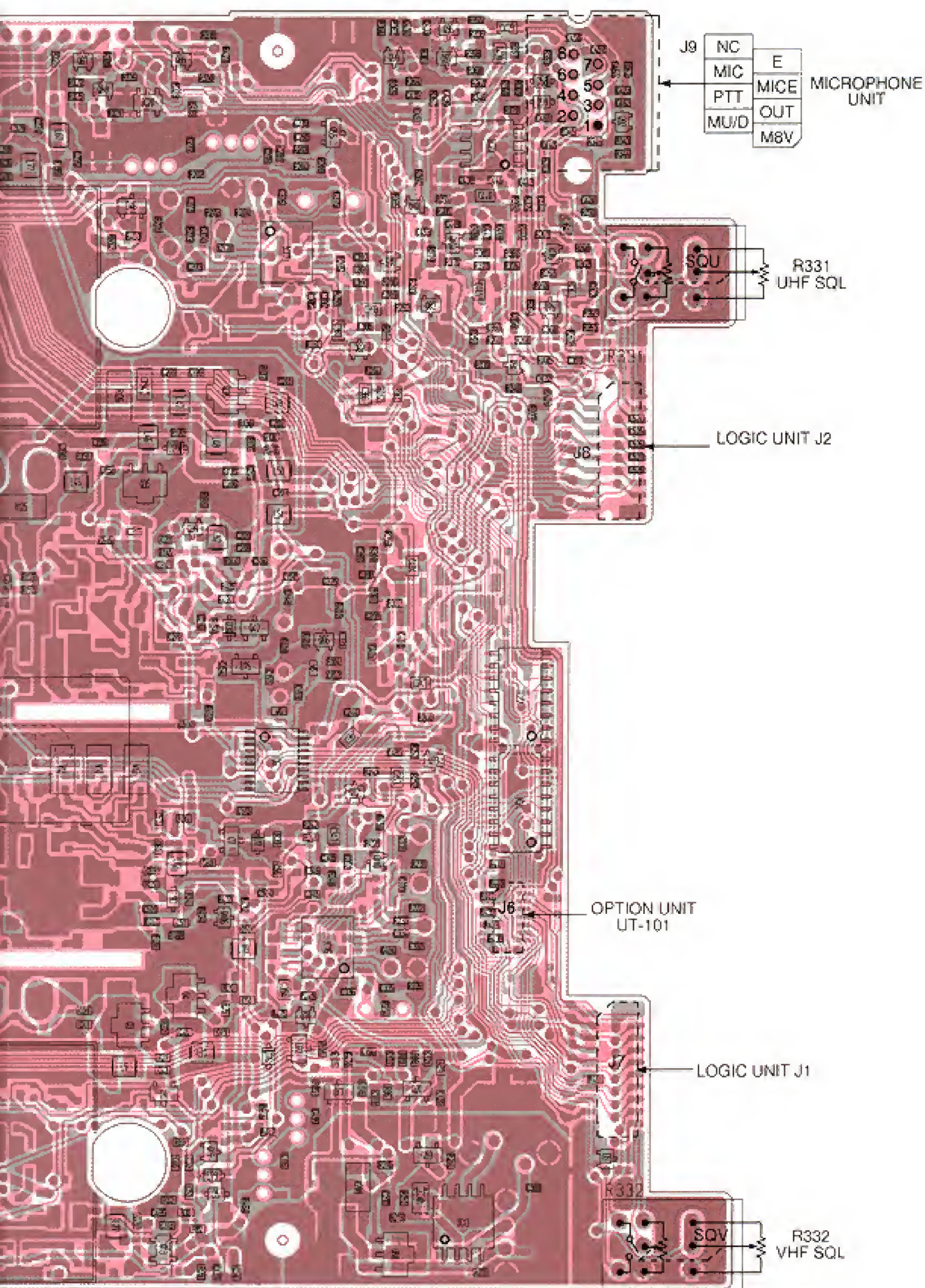


The combination of this page and the next page shows the unit layout in the same configuration as the actual P.C. Board.



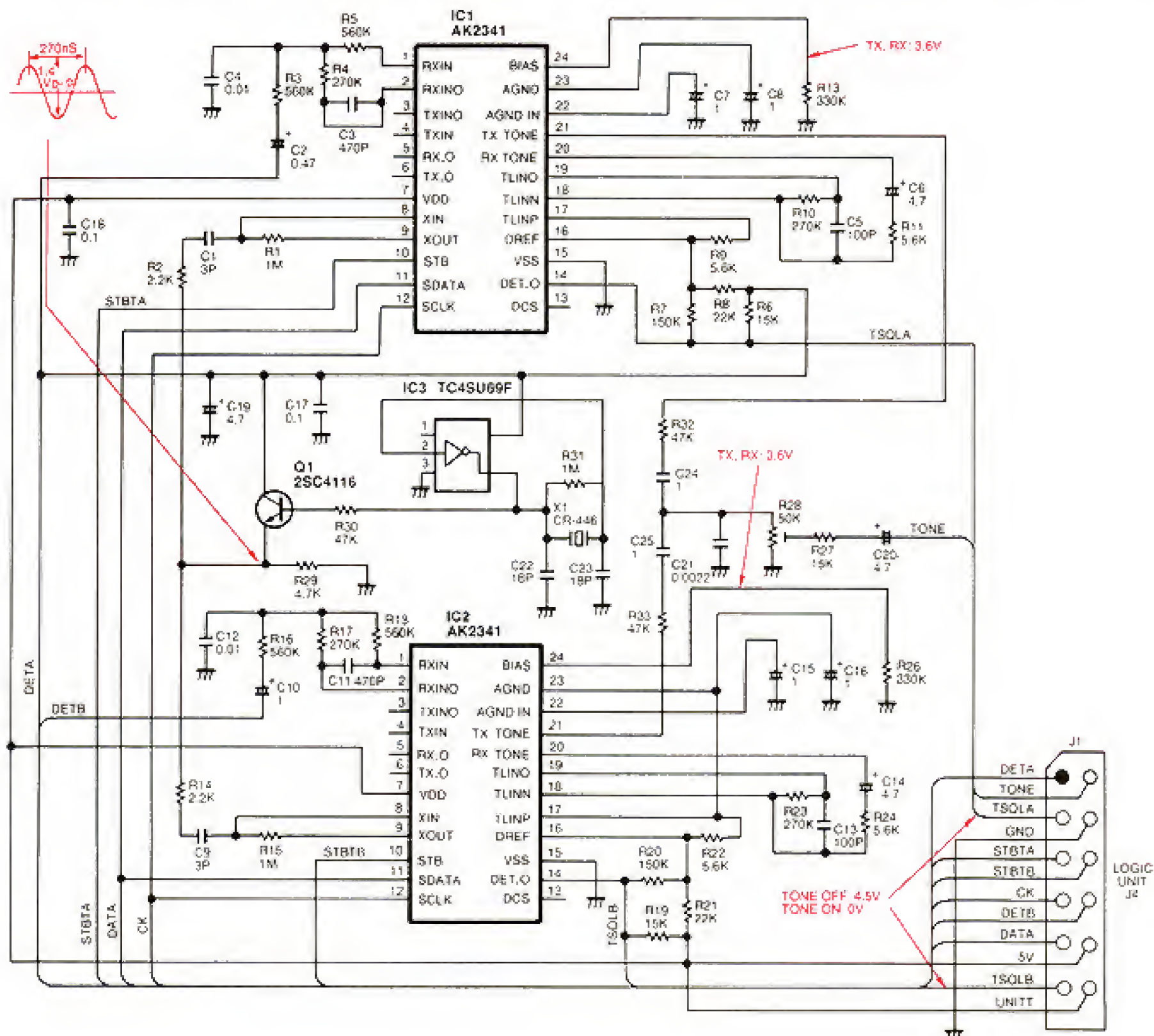
• MAIN UNIT (BOTTOM VIEW)



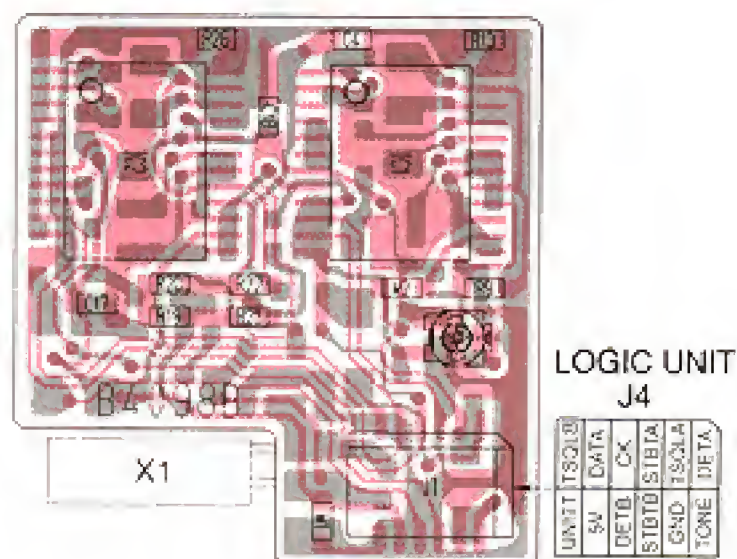


SECTION 10 OPTIONAL UNITS

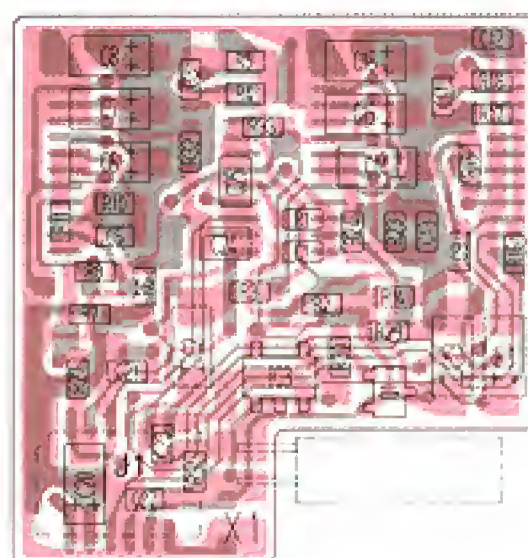
10-1 UT-89 TONE SQUELCH UNIT



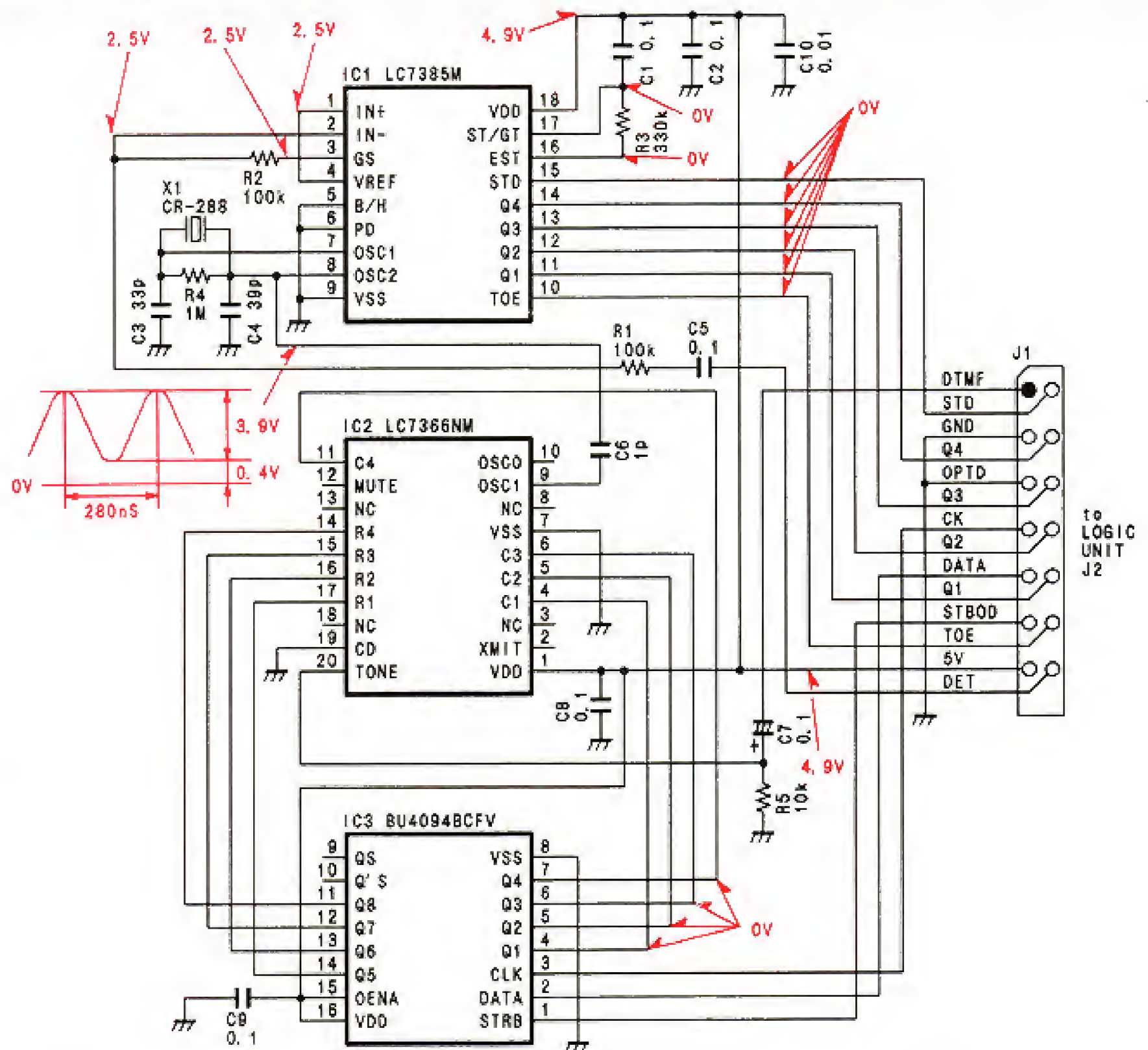
• BOARD LAYOUT (TOP VIEW)



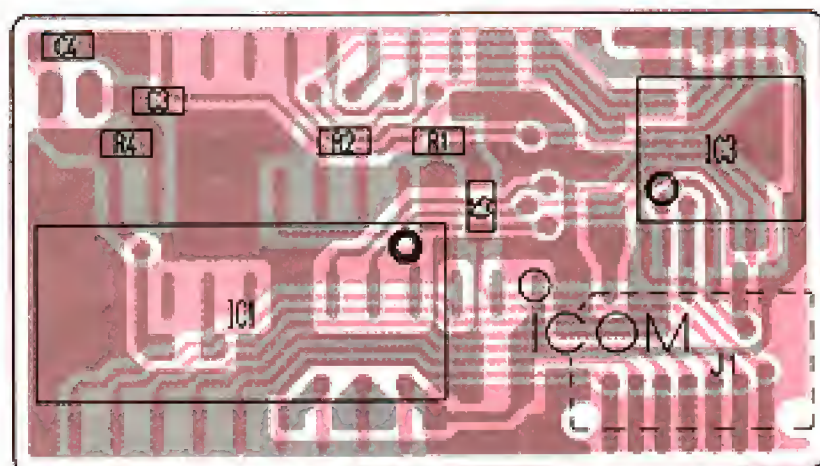
• BOARD LAYOUT (BOTTOM VIEW)



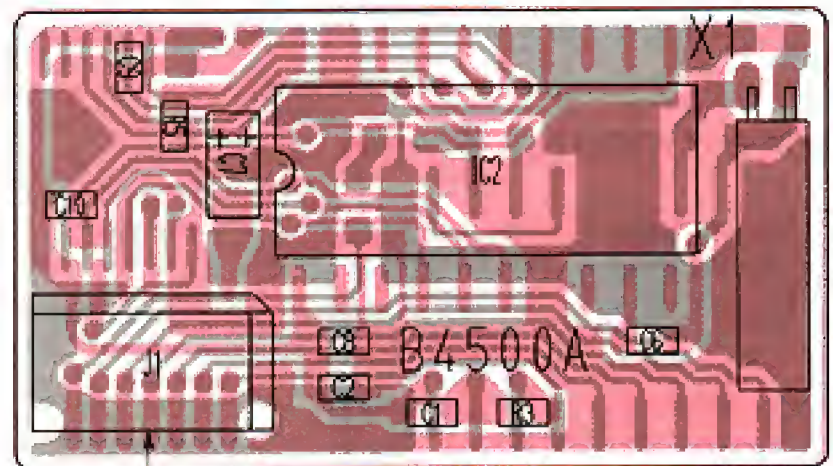
10-2 UT-101 DTMF UNIT



• BOARD LAYOUT (TOP VIEW)



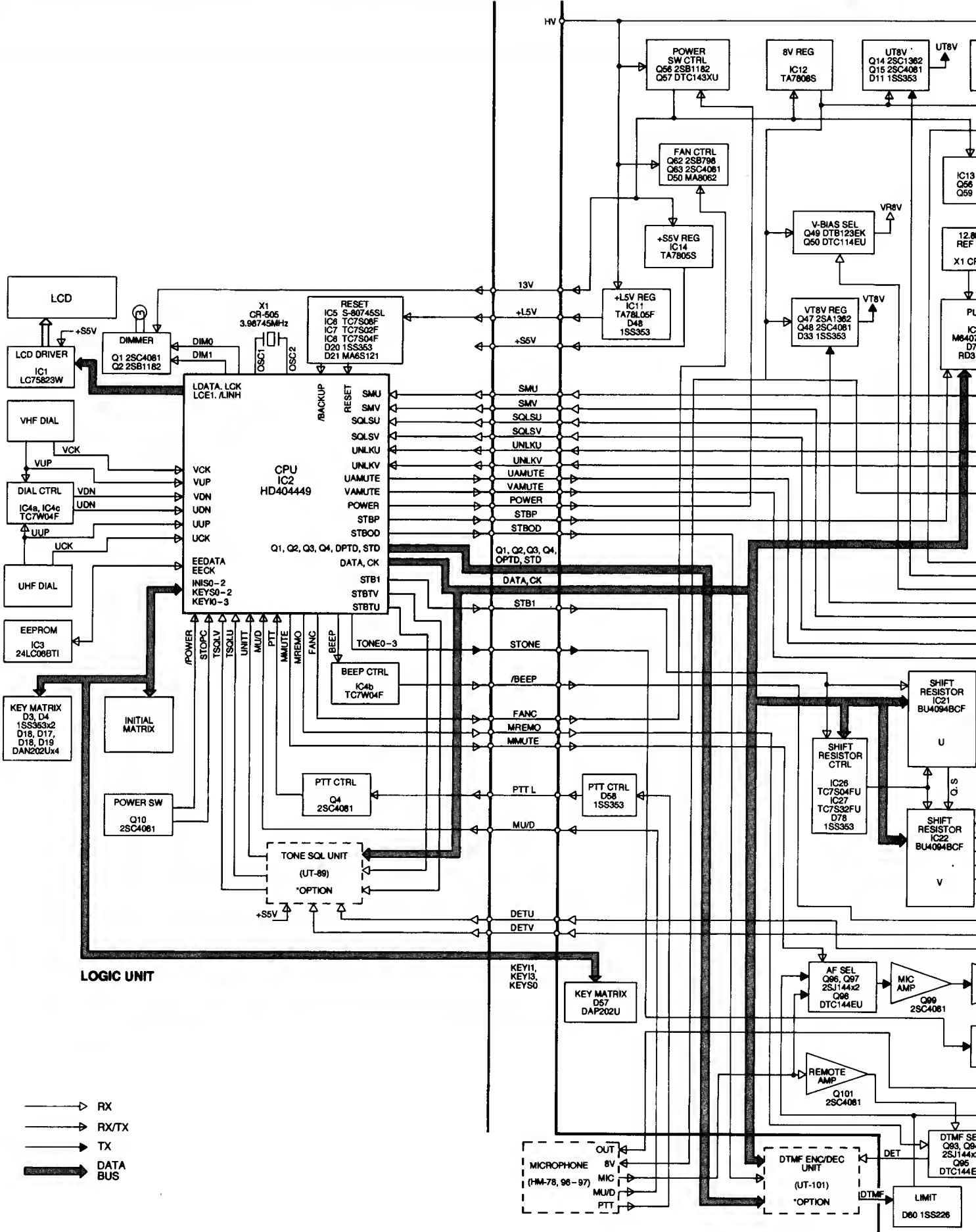
• BOARD LAYOUT (BOTTOM VIEW)

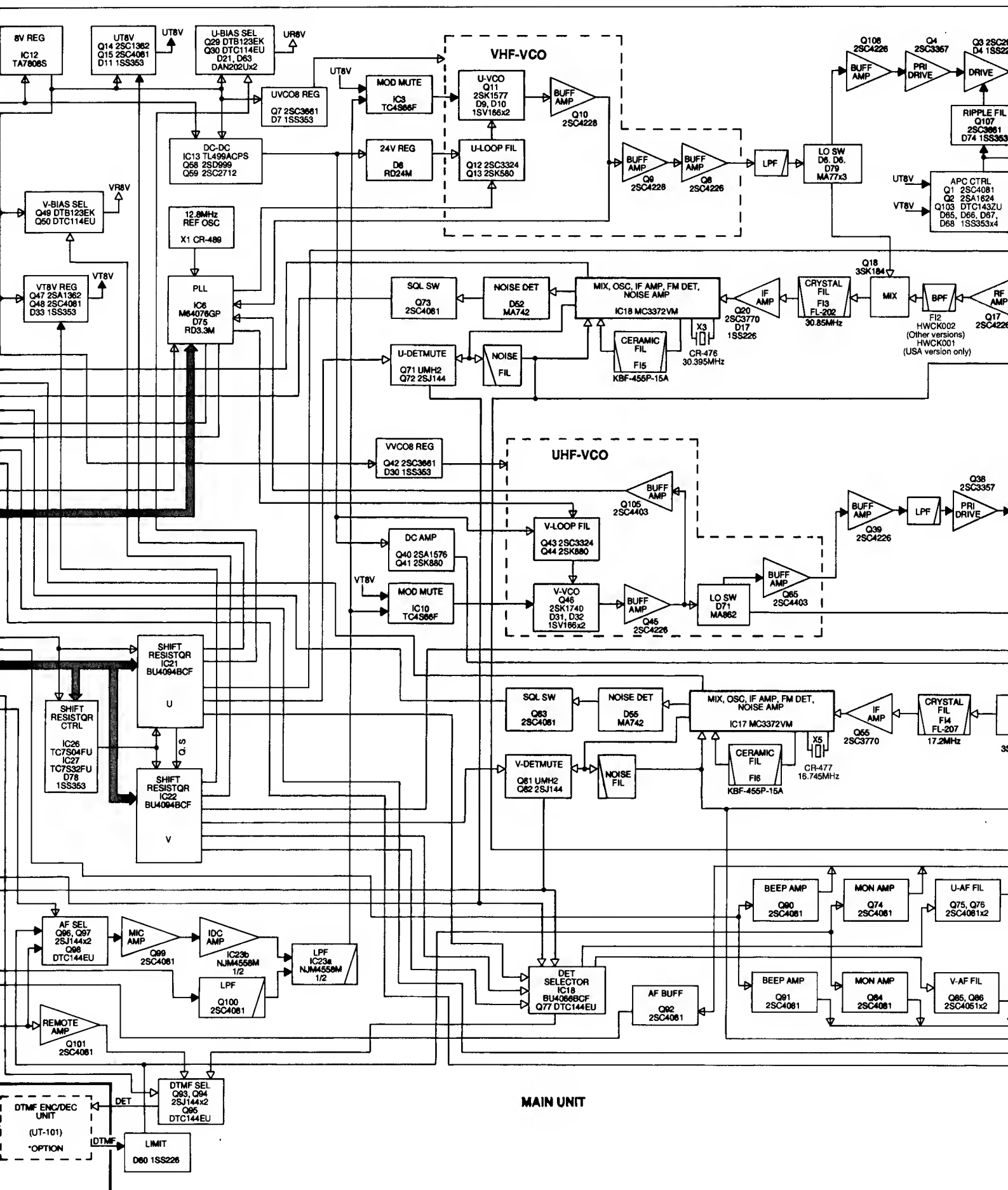


| | | | | | | |
|-----|-----|------|----|------|----|------|
| 5V | STD | DATA | CK | OPTD | E | DTMF |
| DET | TOE | Q1 | Q2 | Q3 | Q4 | STD |

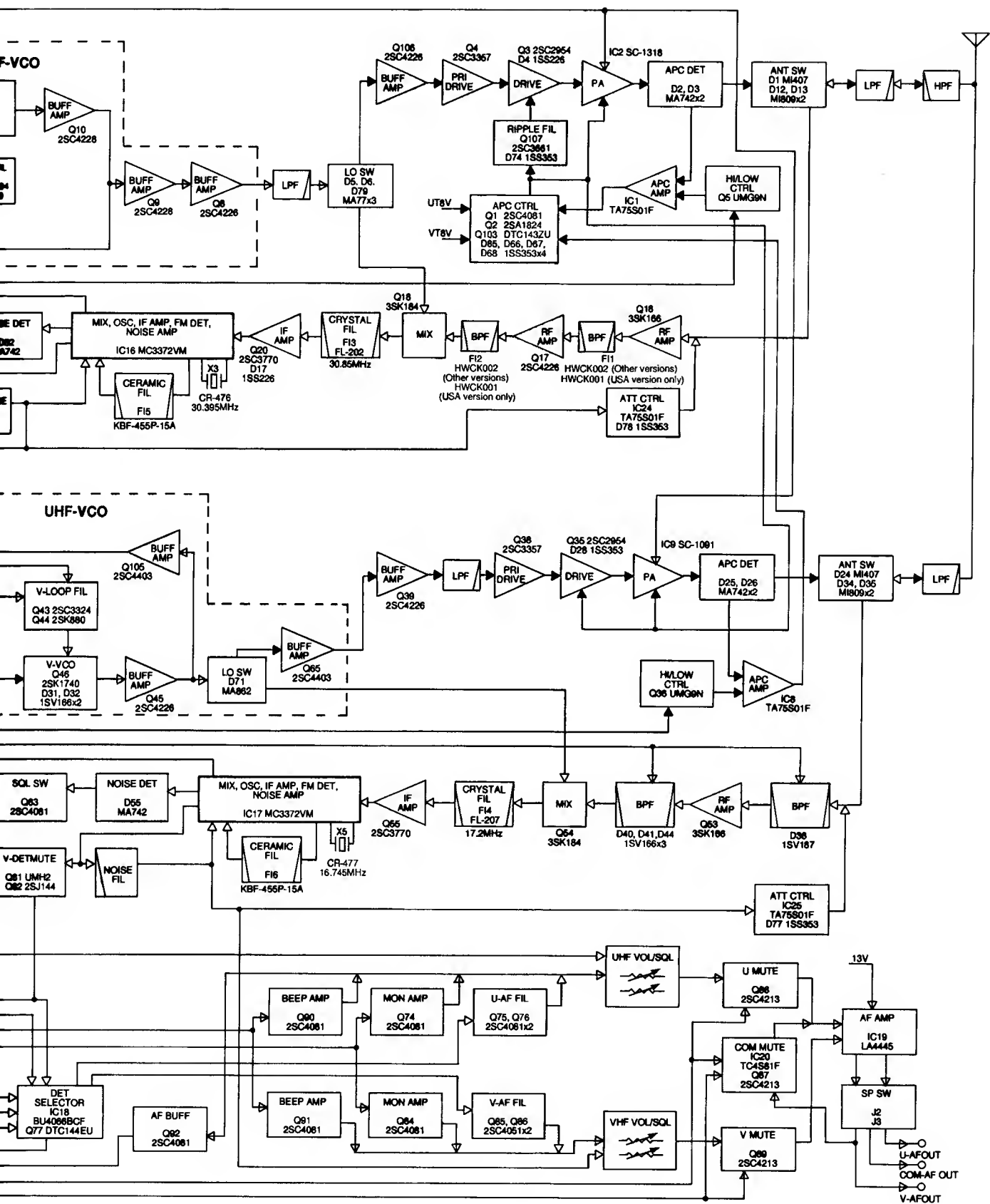
MAIN UNIT J6

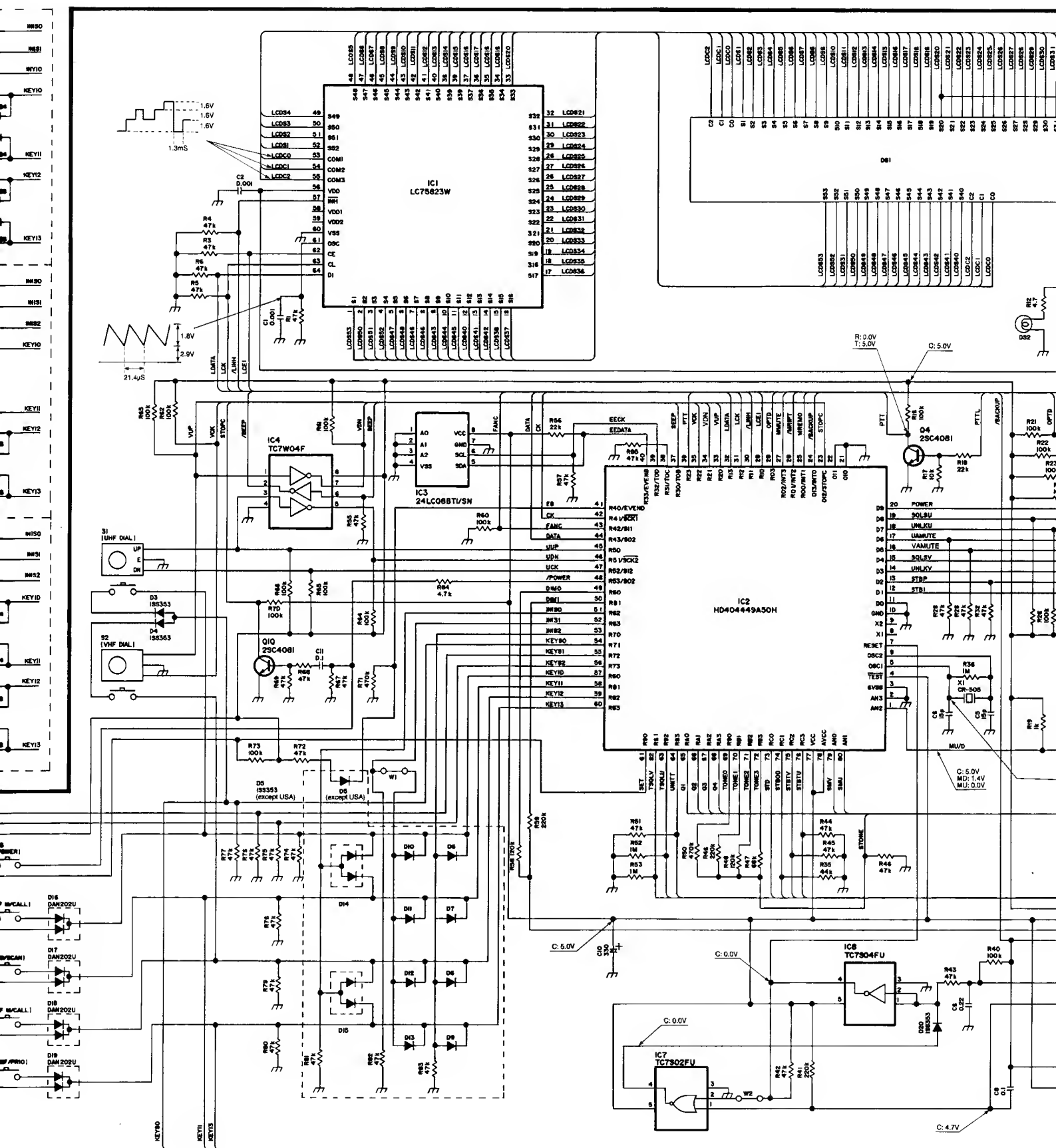
SECTION 11 BLOCK DIAGRAM





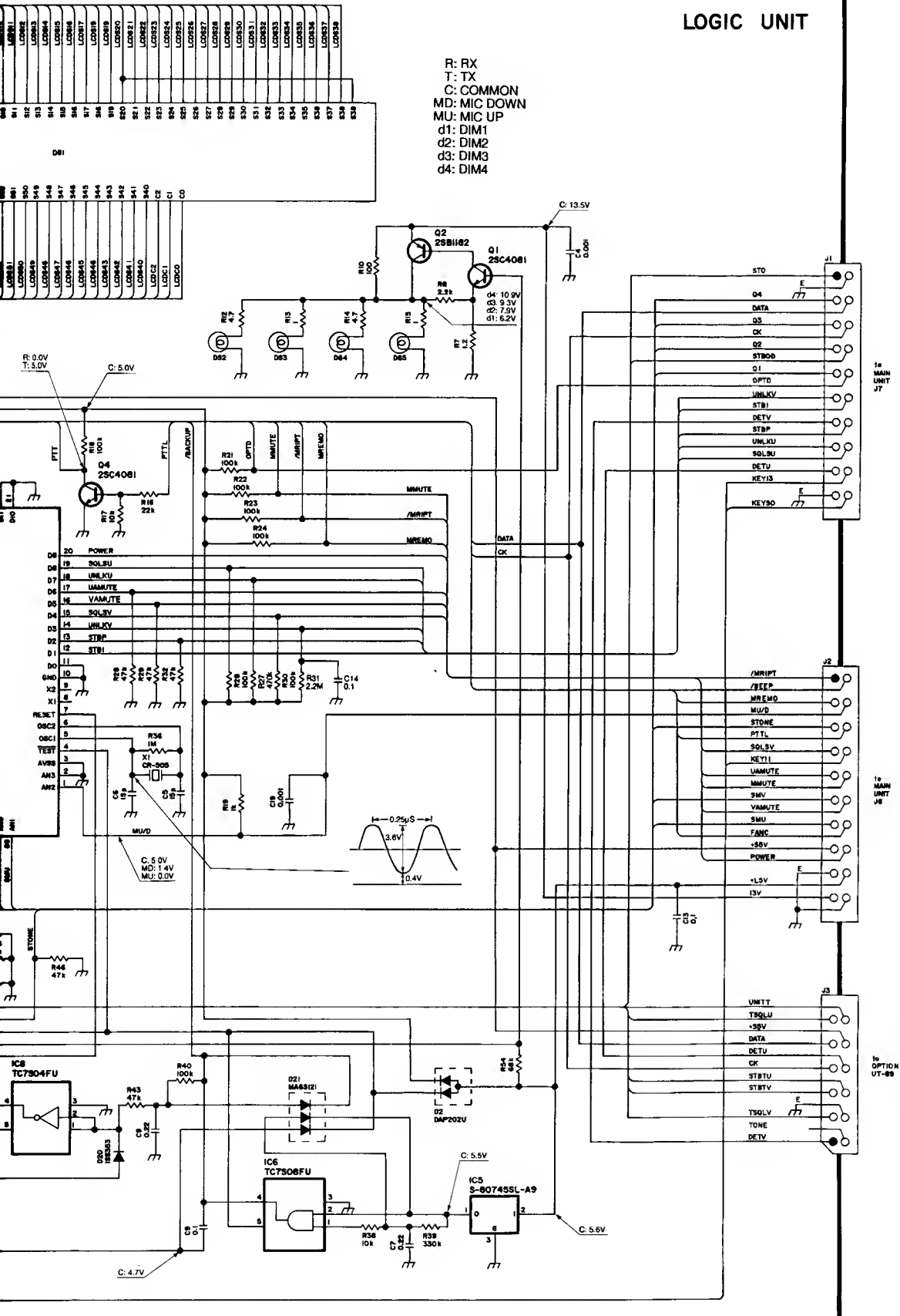
MAIN UNIT



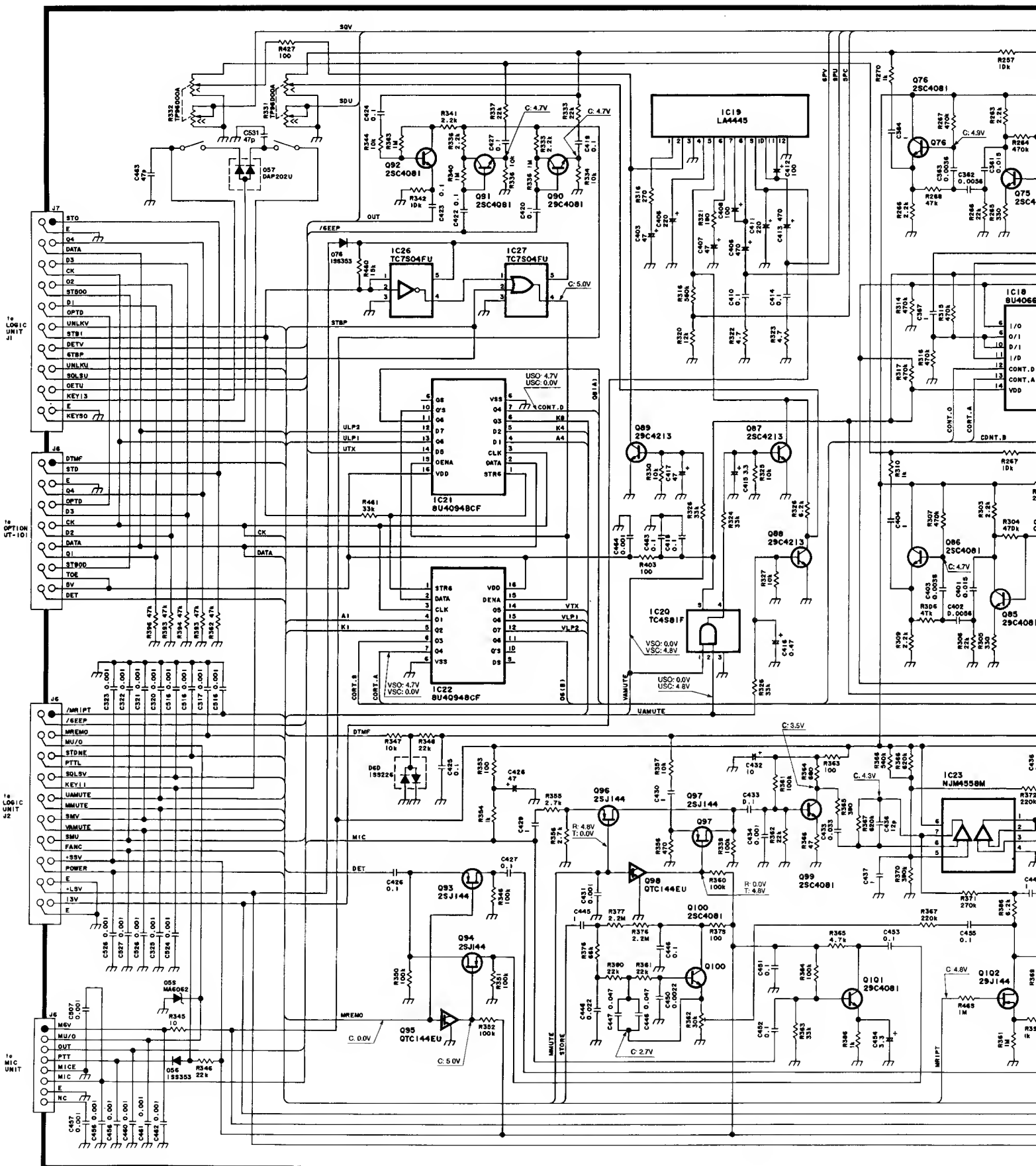


LOGIC UNIT

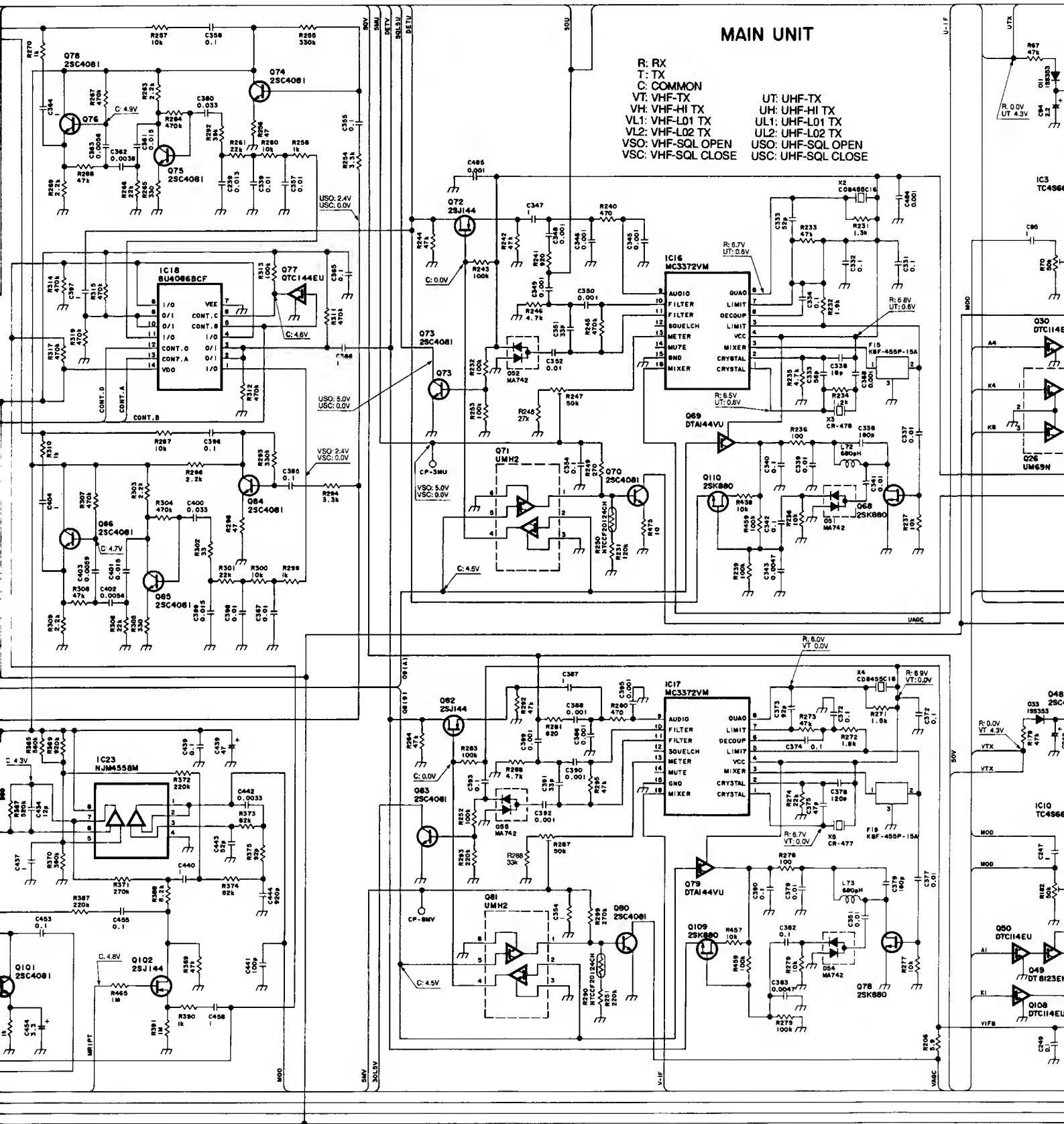
R: RX
T: TX
C: COMMON
MD: MIC DOWN
MU: MIC UP
d1: DIM1
d2: DIM2
d3: DIM3
d4: DIM4

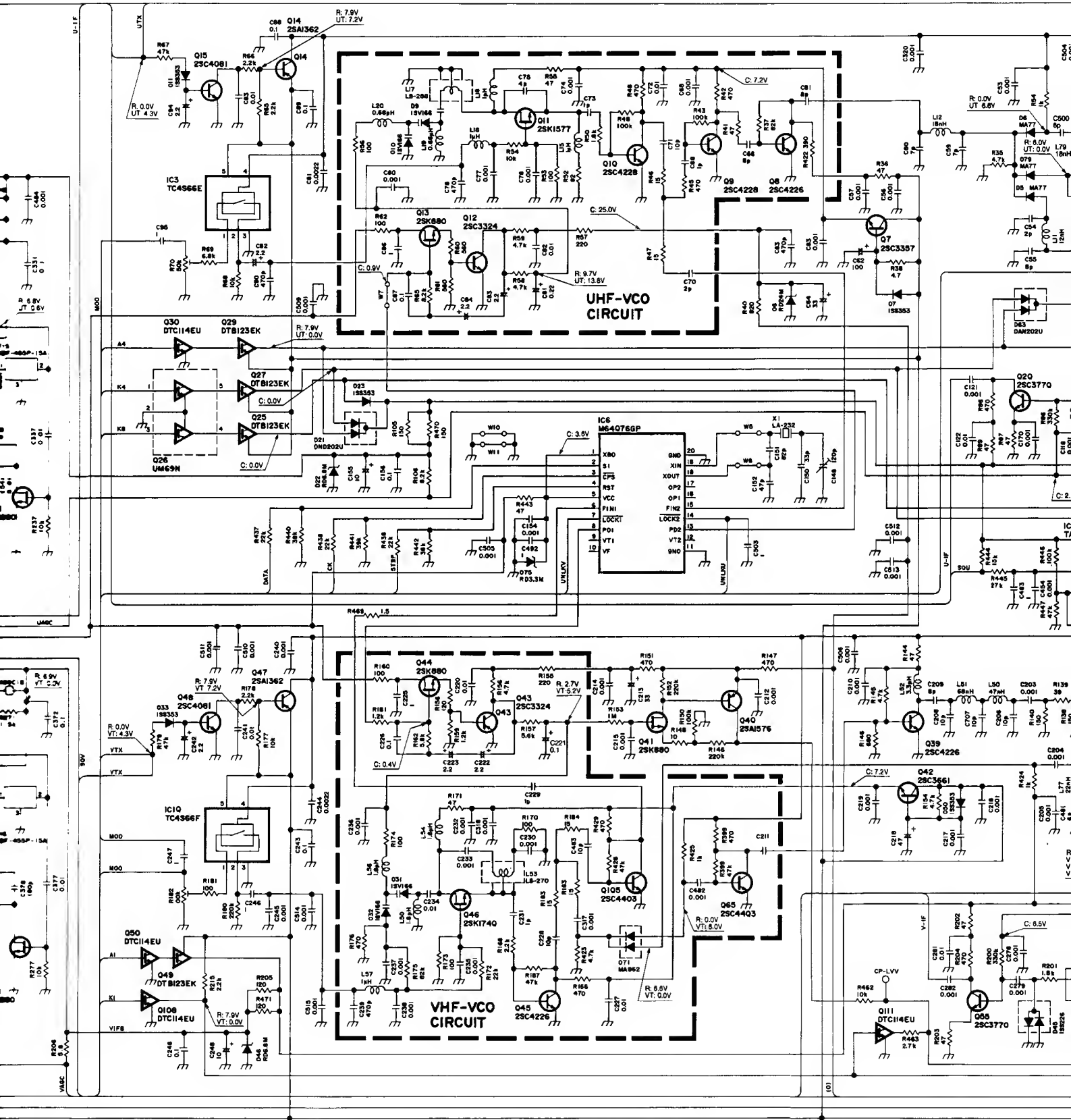


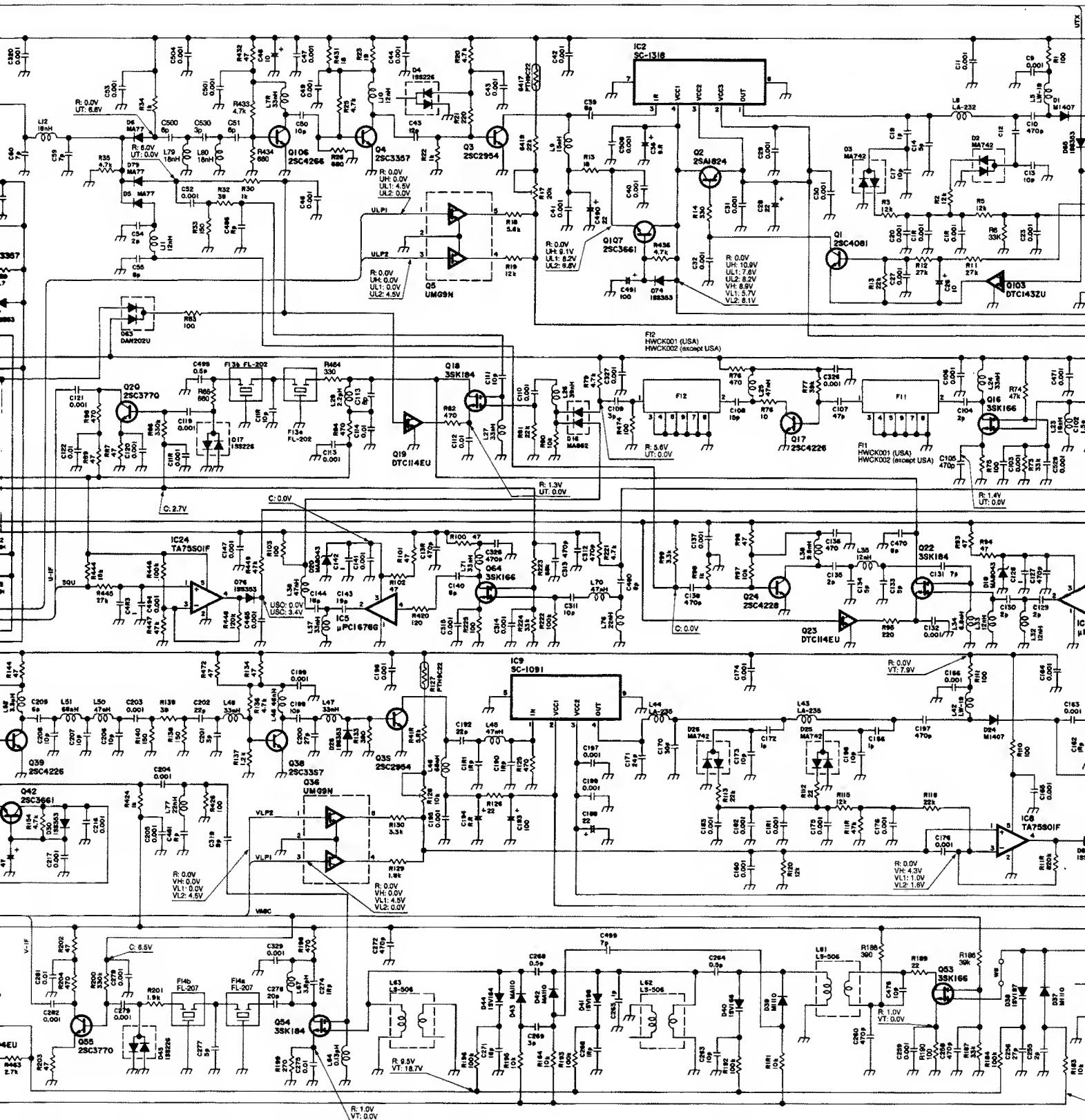
12-2 MAIN UNIT

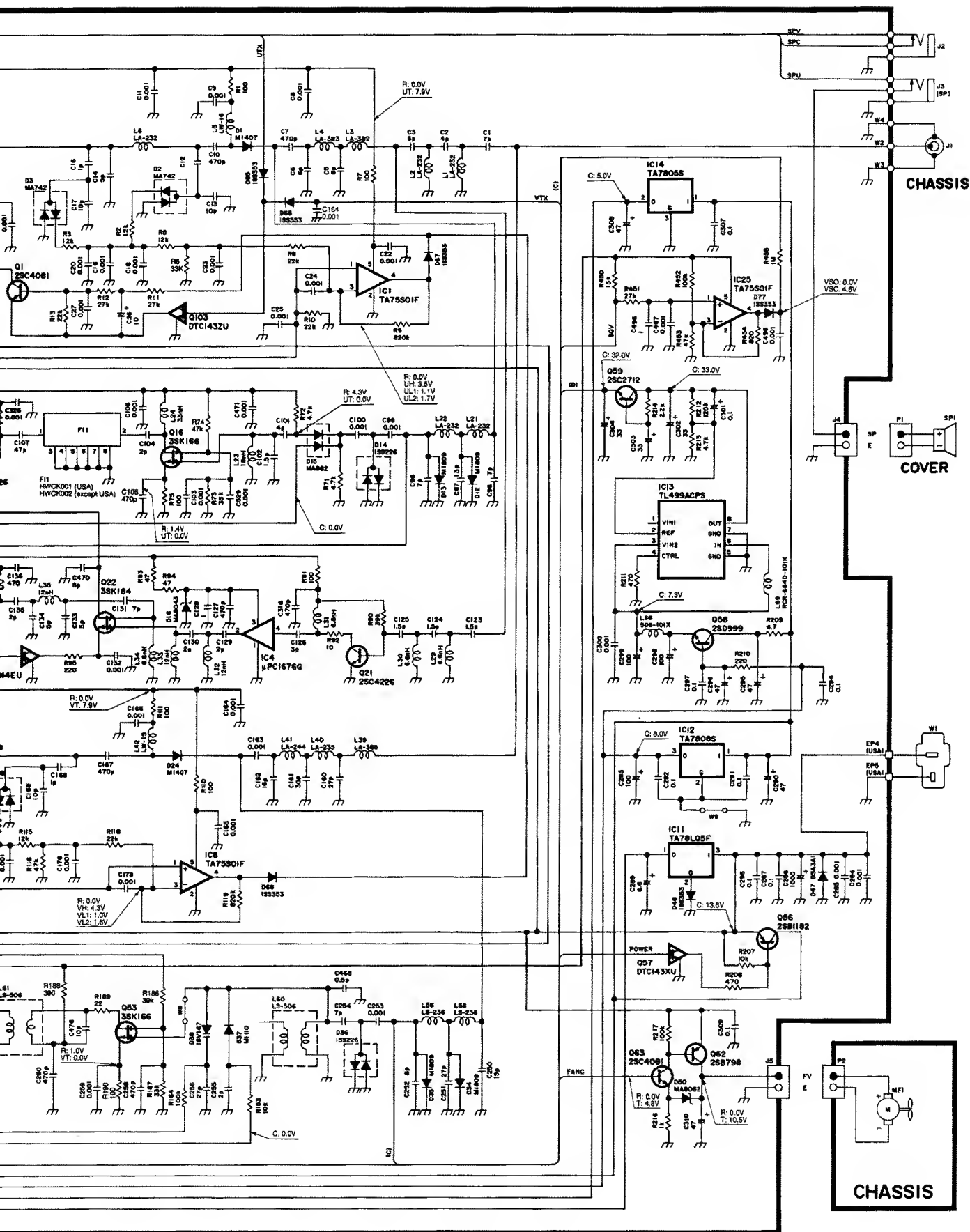


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